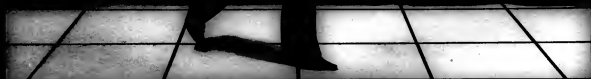






Ford 10

Ford 10



IBM



YOU VS YESTERDAY'S IMAGING, TOMORROW'S DEMANDS

PROUDLY POWERED BY IBM®

THE NEW LOTUS NOTES & DOMINO 7 - BEYOND E-MAIL, BEYOND CALENDARING, BEYOND "IT'LL DO"

IBM SUPER HEAVYWEIGHT SECURITY
FEATURES / EFFORTLESS MANAGEABILITY /
CONTINUING INNOVATION
FOR BUSINESS-CRITICAL COLLABORATION

**KNOCK-OUT APPLICATION
DEVELOPMENT TOOLS**

LOTUS NOTES & DOMINO 7 - A MEMBER OF THE IBM® WORKPLACE™ FAMILY

★ **IBM MIDDLEWARE. POWERFUL. PROVEN.★**
FIGHT BACK AT WWW.IBM.COM/MIDDLEWARE/PRODUCTIVE ALL CHALLENGERS WELCOME

IBM, the IBM logo, Workplace, Lotus, Lotus Notes and Domino are registered trademarks of International Business Machines Corporation in the United States and/or other countries. ©2000 IBM Corporation. All rights reserved.

CONTENTS

10.24.05



Emerging Technology: WAFS Goes the Distance

In the Technology section: Driven by consolidation and compliance requirements, IT organizations are using wide-area file services technologies to bring branch-office file servers into the data center. **Page 21**



Shrinking Degrees of Separation

In the Technology section: In an interview, MacArthur grant winner Jon Kleinberg answers questions about social and computer networks and how emerging search technologies will yield more information. **Page 36**

NEWS

- 4 **Nortel** picks a new CEO — its latest step toward regaining credibility with users.
- 5 **Cisco** links emergency workers with a communications system that tries to solve interoperability problems by connecting via IP and SIP.
- 5 **Mississippi** enlists BI tools and geographic information systems software to help with disaster aid.
- 8 **Cisco** upgrades its Network Admission Control endpoint security tools so they can be used on its switches and wireless networking gear.
- 8 **Siebel** customers can get a good price for the vendor's products if they negotiate right, users say.
- 10 **Outsourcing** deals are hindered by new challenges, including regulatory requirements and a lack of managers.
- 12 **Global Dispatches:** A large bank in India chooses Linux for its branch applications.
- 12 **Sarbanes-Oxley** compliance adds costs but also prepares companies to meet future federal regulations, execs say.
- 14 **Storage Networking** World: iSCSI and data-protection technologies will get a lot of attention from attendees at this week's event.
- 16 **Q&A: New Business Objects** CEO John Schwarz explains his move from Symantec.

TECHNOLOGY

- 27 **Geek's Garden:** A look at online bill payment trends, the origins of random-access memory and a virtual mirror of human behavior are on this week's tour.
- 29 **Hands On: Disk Defragmenters Demystified.** Offer defragmentation tools differ a trade-off between thoroughness and speed, Russell Kay reviews three defragmentation utilities.
- 34 **Security Manager's Journal: Bottom-Up Infosec Trumps Top-Down.** The higher-ups ask C.J. Kelly for an infosec plan on paper, and she finds that her bottom-up approach covers more of the bases than this top-down effort.

ONLINE

SNW Coverage

STORAGE: See complete coverage of Storage Networking World Fall this week from Orlando, including news reports, conference blogs and more. www.computerworld.com/blogs

Unknown Applications

DISASTER RECOVERY: Just about every company has "useless applications" — those that have been instituted by end users without the knowledge of the IT department. So, how does IT live with them? Alan Brill of Kroll Outback has a few ideas. **Q QuickLink 83464**

OPINIONS

- 6 **On the Merit:** Merit Hall reports on a new online service that lets companies get by without an admin assistant by handling travel bookings and other basic business tasks.
 - 18 **Don Tennant** finds it unacceptable that female IT professionals earn 90 cents for every dollar their male counterparts earn.
 - 18 **Thornton A. May** blasts three false assumptions about IT.
 - 19 **John D. Helamka** wonders why he can use his ATM card in a Japanese post office but his electronic medical records can't be sent across the street back home in Boston.
 - 38 **Robert L. Mitchell** knows users will whine about a stronger security stance on the devices they use, but increased liability risks demand it.
 - 64 **Frankly Speaking:** Frank Hayes says we all benefit when the free market comes into play as it has in Massachusetts, where the state has declared that OpenDocument will be its official format for internal documents from now on, causing Microsoft to start yowling.
- | | |
|------------------------------|-------|
| DEPARTMENTS/RESOURCES | |
| At Deadline Briefs | 4 |
| News Briefs | 6, 10 |
| Letters | 19 |
| IT Careers | 58 |
| Company Index | 61 |
| How to Contact CW | 61 |
| Share Your | 64 |

The New Normal?

With another year of skimpy 3% raises, it sure looks that way for the more than 14,000 IT workers who took part in Computerworld's 19th Annual Salary Survey. Now resigned to cost-of-living increases, most are finding consolation in slightly higher bonuses, a bit less work and lower stress. **PAGE 41**

**COMPUTERWORLD
SALARY
SURVEY
2005**

Opinion: Unhappy with your paycheck? It's really about respect, not more money, says columnist Paul Glen. **PAGE 46**

Charts and Data Points: Find salary information for 30 IT job titles, plus data broken out by region and company size. Also, see how we conducted this year's survey. **PAGE 46**

Opinion: Innovation helps drive salaries, says columnist Johanna Robitman, so look for ways to increase your technical skills and your ability to bring value to your company. **PAGE 54**

Road Runner's blog this week at QuickLink a7340.

ONLINE EXCLUSIVES



CONTENTS

10.24.05



Emerging Technology: WAFS Goes the Distance

In the Technology section: Driven by consolidation and compliance requirements, IT organizations are using wide-area file services technologies to bring branch-office file servers into the data center. **Page 21**



Shrinking Degrees of Separation

In the Technology section: In an interview, MacArthur grant winner Jon Kleinberg answers questions about social and computer networks and how emerging search technologies will yield more information. **Page 36**

NEWS

- 4 **Nortel picks** a new CEO — its latest step toward regaining credibility with users.
- 9 **Cisco links** emergency workers with a communications system that tries to solve interoperability problems by connecting via IP and SIP.
- 16 **Mississippi enlists** BI tools and geographic information systems software to help with disaster aid.
- 28 **Cisco upgrades** its Network Admission Control endpoint security tools so they can be used on its switches and wireless networking gear.
- 38 **Siebel customers** can get a good price for the vendor's products if they negotiate right, users say.
- 40 **Outsourcing deals** are hindered by new challenges, including regulatory requirements and a lack of managers.
- 42 **Global Dispatches** A large bank in India chooses Linux for its branch applications.
- 42 **Sarbanes-Oxley** compliance adds costs but also prepares companies to meet future federal regulations, experts say.
- 44 **Storage Networks World** **ISCSI** and data-protection technologies will get a lot of attention from attendees at this week's event.
- 46 **Q&A: New Business Objects** CEO John Schwarz explains his move from Symantec.

TECHNOLOGY

- 27 **Geek's Garden:** A look at online bill payment trends, the origins of random-access memory, and a virtual mirror of human behavior are on this week's tour.
- 29 **Hands On: Disk Defragmenters Demystified.** Disk defragmentation tools offer a trade-off between thoroughness and speed. Russell Kay reviews three defragmentation utilities.
- 34 **Security Manager's Journal: Bottom-Up Infosec Trumps Top-Down.** The higher-ups ask C.J. Kelly for an infosec plan on paper, and she finds that her bottom-up approach covers more of the bases than this top-down effort.

ONLINE

www.computerworld.com

SNW Coverage
STORAGE. See complete coverage of Storage Networking World Fall this week from Orlando, including news reports, conference blogs, and more. www.computerworld.com/snwnow

Unknown Applications
DISASTER RECOVERY. Just about every company has "orphan applications" — those that have been installed by end users without the knowledge of the IT department. So, how does IT live with them? Alan Brill of Kroll Ontrack has a few ideas. **Q LinkUp 57474**

OPINIONS

- 6 **On the Mark:** Mark Hall reports on a new online service that lets companies get by without an admin assistant by handling travel bookings and other basic business tasks.
- 16 **Don Tennant** finds it unacceptable that female IT professionals earn 90 cents for every dollar their male counterparts earn.
- 18 **Thornton A. May** blasts three false assumptions about IT.
- 19 **John D. Halama** wonders why he can use his ATM card in a Japanese post office but his electronic medical records can't be sent across the street back home in Boston.
- 38 **Robert L. Mitchell** knows users will whine about a stronger security stance on the devices they use, but increased liability risks demand it.
- 64 **Frankly Speaking: Frank Hayes** says we all benefit when the true market comes into play as it has in Massachusetts, where the state has declared that OpenDocument will be its official format for internal documents from now on, causing Microsoft to start yawning.

DEPARTMENTS/RESOURCES

At Deadline Briefs	4
News Briefs	6, 10
Letters	19
IT Careers	58
Company Index	61
How to Contact CW	81
Share Tank	64

The New Normal?

With another year of skimpy 3% raises, it sure looks that way for the more than 14,000 IT workers who took part in Computerworld's 19th Annual Salary Survey. Now resigned to cost-of-living increases, most are finding consolation in slightly higher bonuses, a bit less work and lower stress. **PAGE 41**

COMPUTERWORLD
SALARY SURVEY
2005

Opinion: Unhappy with your paycheck? It's really about respect, not more money, says columnist Paul Glen. **PAGE 46**

Charts and Data Points: Find salary information for 30 IT job titles, plus data broken out by region and company size. Also see how we conducted this year's survey. **PAGE 48**

Opinion: Innovation helps drive salaries, says columnist Johannes Rothman, so look for ways to increase your technical skills and your ability to bring value to your company. **PAGE 54**
Read Rothman's blog this week at QuickLink.a7340.

ONLINE EXCLUSIVES

Interactive Smart Salary Tool

Opinion

PowerPoint Downloads

AT DEADLINE

Cisco May Build Products in India

Cisco Systems Inc. is considering manufacturing products in India, Cisco President and CEO John Chambers told reporters in Bangalore last Friday. The networking vendor won't invest in a manufacturing plant, but it may hire third parties to do the work. Chambers also said that Cisco will spend about \$50 million on a facility to house its Bangalore R&D unit.

EMC Says Q3 Profit Nearly Doubled . . .

EMC Corp. reported that its third-quarter sales rose 17% from the same period last year and that its quarterly profit nearly doubled. The storage vendor said sales of its Vireum software grew 67%, while its Clarion and Symmetrix array business slowed.

Q3 '95	27.9%
Q3 '94	24.1%

. . . And Announces Plan to Buy Captiva

EMC has agreed to acquire Captiva Software Corp., a maker of software for digitally capturing documents, for about \$275 million in cash. EMC already integrates Captiva's InquisiDoc software with its Documentum content management system, and it plans to further that integration after the deal is complete. EMC also plans to continue development of Captiva's stand-alone products.

Qualcomm Files Suit Against Broadcom

Qualcomm Inc. has filed a second lawsuit in its patent dispute with Broadcom Corp. The new lawsuit charges that Broadcom products infringe on Qualcomm patents for image compression technology and video encoding and decoding technology. Both companies make chips for mobile devices.

Nortel Hires CEO; Users Seek Sharper Focus on Corporate IT

Vendor needs to rebuild credibility, improve marketing

BY MATT HAMBLIN

NORTTEL Networks Corp. last week named former Motorola Inc. executive Mike Zafirovski president and CEO, a move that surprised some customers because it came 19 months after Nortel board member Bill Owens took the helm of the embattled vendor and began a series of internal reforms.

But in general, more than 20 users interviewed last week said they look at Zafirovski's hiring as a continuation of the network equipment vendor's efforts to rebuild itself after four years of turmoil that was triggered by an accounting scandal.

Re-establishing credibility with customers will be critical as Nortel tries to capture a larger base of corporate users, said Steve Ford, president of the International Nortel Networks Users Association in Chicago. With more than 5,000 members, the INNAA is Nortel's largest user group.

When Owens spoke at the group's annual conference last summer, he told attendees "that Nortel will be here for us in the long term," said Ford, who is coordinator of electronic services at Northeastern State University in Tahlequah, Okla. He added that INNAA officials "trust we will see that same dedication to customers" from Zafirovski.

Blocking Maneuver

The management change is due to take effect Nov. 15. However, two days after Nortel announced Zafirovski's appointment, Motorola filed a lawsuit in an Illinois court attempting to prevent him from working at Nortel for two years. Motorola alleged that Zafirovski,

who was its president and chief operating officer until last January, violated a noncompetition clause when he agreed to join Nortel.

Brampton, Ontario-based Nortel said in a statement that it would review the lawsuit and try to discuss the matter with Motorola "with a view to resolving the dispute."

Zafirovski, 51, said during a press conference that he plans to emphasize ethics and integrity at Nortel while trying to attract more enterprise customers and increase profit margins from the low single digits to between 13% and 19% of revenue (see story below).

Users like Ford applauded Zafirovski's plan to pay more attention to corporate accounts, as opposed to telecommunications vendors. He said an internal realign-



ment that Nortel announced last month also should help sharpen the vendor's corporate focus. For example, he noted that Nortel plans to build support systems for customers that will be aligned with the INNAA's regional chapters.

Michael Hazdra, a telecommunications manager at Benedictine University in Lisle, Ill., said he was surprised that Owens—who was vice chairman of Nortel's board before taking the CEO job — is stepping down so soon.

On the other hand, John Halton, network director at Erlanger Health System in Chattanooga, Tenn., said he had been told by Nortel that the 65-year-old Owens "was filling a gap and never really intended to stay for the long haul."

Like some other users, Hal-

ton called on Zafirovski to market Nortel's products better. But he added that Nortel has been "shuttled enough, in my opinion," for all of its problems. "I think they're still a very financially viable company, and we'll keep our investments moving in their direction," Halton said.

Robert Whiteley, an analyst at Forrester Research Inc., said Zafirovski is becoming CEO at an important juncture. Nortel "hasn't maintained a strong focus, hasn't marketed much and had a temporary modes operandi with Owens at the helm," said Whiteley. Selling products to network services providers offers only moderate growth potential for the company because the market is so competitive, he said.

He added that the enterprise market has higher growth potential and that both Nortel and Hewlett-Packard Co.'s ProCurve unit have chances to be an Avia to Cisco Systems Inc.'s Hertz. ☐ 5775

New Exec Looks Beyond Telecom Market

Mike Zafirovski, who is scheduled to take over as Nortel's president and CEO next month, discussed some of his plans for the company during a press conference last week. Among other things, he vowed that Nortel will have a firm ethics policy. Excerpts from his comments follow.

On business ethics: "I'm one who believes in ethics and integrity. I love to win and compete . . . but not by using illegal substances, to use an analogy from sports, I believe in following the letter and spirit of the law."

On guiding Nortel users toward the enterprise market:

"It's one strike and you're out when it comes to ethics and integrity."

"Most people will think of Nortel as a telecom [equipment] provider, and certainly that's an important part of our business. But we should be expanding our views [of] and our potential [with corporate users]."

On Nortel's future: "I'm not at all concerned about the challenges facing us, and the technology opportunities [that] play to win. I'm convinced that

Nortel will be a big winner again."

On his immediate priorities: "First, to continue Nortel's financial transformation. Second, to come up with a clear and strategic focus. In a company with more than \$11 billion in revenue, I need to get a sense of priorities and priorities. Third, profitability. We've worked too hard to have the operating margin in the low double single digits. Fourth, innovation and the R&D effort. I love engineering and want to see how to apply it to consumer and enterprise users and make sure we have the right products in place."

—Matt Hamblin

Cisco Builds System to Boost Emergency Communications

Workers' devices made interoperable by IP technology

BY MATT HAMBLIN

Cisco Systems Inc. today will announce plans for a communications system designed to allow walkie-talkies and other devices used by emergency personnel to interoperate via the Internet Protocol and Session Initiation Protocol.

The technology attempts to address a problem that many public officials believe has reached crisis proportions. For example, after hurricane Katrina and Rita struck the Gulf Coast, state and local police were unable to communicate with each other because their systems weren't interoperable.

Audwin Samuel, mayor pro tem of Beaumont, Texas, said in testimony last week before the U.S. House Committee on Homeland Security.

"Communications interoperability has always been a concern with first responders, going back to the first radios," said Michael Griffin, assistant chief of law enforcement for California's Office of Emergency Services. "There's a growing realization from public safety experts that we need to look at new technologies."

Cisco's new offering, called the IP Interoperability and Collaboration System (IPICS), will be rolled out globally over the next six to 12 months, according to Shah Talukder, general manager of the networking vendor's safety and security

TECHNOLOGY DETAILS

IPICS

KEY COMPONENTS:

- Server hardware and software that manages devices and the conversion of network traffic from other protocols to IP.
- An application that manages priority radio communications services.
- A set of XML-based voice-over-IP services.

systems business unit.

With 30 to 15 years of life left in expensive handheld radios that use proprietary networks, Cisco decided to take the legacy infrastructure "and tie it all to IP, and from there to other modalities," Talukder

said. He added that IPICS can be used to connect push-to-talk radios to each other and to analog, cellular and IP phones, handhelds and laptop PCs with Wi-Fi links.

Cisco plans to demonstrate the technology at a press conference in New York, and the company said it has several trial projects under way in both the public and private sectors. Pricing has yet to be finalized, said Talukder.

Potential private-sector uses include transportation and manufacturing applications in which independent drivers or contractors use different radio networks but need to be able to communicate, he said.

"This is unique technology, and it solves a glaring problem with first responders and federal agencies and the military," said Bradley Curran, analyst at Frost & Sullivan Ltd. in New York.

Curran has seen IPICS demonstrated for some applications but said the technol-

ogy's true value will be realized as Cisco adds more features, such as support for linking GIS information with other data and even video feeds. That functionality could, for example, give disease-control experts located far from the scene of a biological attack the ability to communicate with local officials via their laptops and perhaps share medical drawings and pictures, he said.

Griffin agreed that more is needed than just support for voice communications between devices. "Major events require not just voice interoperability but integrated mapping, data and video," he said, noting that firefighters need architectural drawings of buildings that are on fire.

Other efforts to provide emergency communications interoperability are in progress at the state and local levels, and the U.S. Department of Justice's CommTech program provides grants for technical research. **■ 87746**

BI-GIS Systems Support Disaster Relief Efforts

Fraud-detection app put to new use after Katrina

BY HEATHER HAYENSTEIN

Two weeks before Hurricane Katrina slammed into the Gulf Coast, Mississippi's Department of Human Services was wrapping up training classes for an application that promised to detect food stamp fraud.

Once the hurricane hit, state officials moved quickly to use the software, which marries business intelligence tools and geographic information systems (GIS) software, to help ensure that aid monies weren't wasted or stolen in the 15 coastal counties targeted for additional food stamp benefits.

Mississippi officials last week said that they plan to make the location-based BI application available to all state agencies so it can be adapted for a variety of uses, such as tracking foster children and Medicaid recipients.

Bud Douglas, chief systems officer in Mississippi's Department of Human Services, said the application uses WebFocus reporting tools from Information Builders Inc., adapters from IBM's iWay Software unit, and GIS tools from Environmental Systems Research Institute Inc. (ESRI) to display BI data in maps.

The interface for the system was created by developers in the state of Louisiana's IT operation, which also uses the application.

Additional Uses

For the original application, the WebFocus tool is used to generate reports detailing what recipients are buying with food stamps. The GIS maps can pinpoint the locations of 1.2 million daily food stamp transactions and highlight suspicious behavior, Douglas said.

Next, the state hopes to build a GIS map for all state agencies to map the resi-

dences of all potential clients, Douglas noted. For example, the application would map the locations of the state's elderly and special needs populations to help in evacuation planning for a future disaster, he said.

But first, funding is required to create geocodes, which identify the longitude and latitude of physical locations.

Mississippi's state govern-

ment is but one operation using a combination of BI and GIS tools for hurricane planning and recovery efforts.

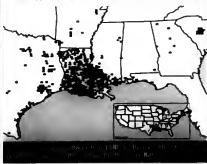
The American Red Cross used such tools to prepare for Hurricane Wilma, projected to hit Florida over the weekend.

During and after hurricanes Katrina and Rita, the Red Cross relied heavily on location-based BI for purposes such as

deciding where to send relief supplies and set up service centers, said Greg Tune, lead program manager for disaster assessment and GIS at the Red Cross in Washington.

The relief organization uses Web-based query and reporting tools from Business Objects SA to extract data from its data warehouse and GIS tools from ESRI to generate maps based on that data, he explained.

The use of location-based BI should grow, said Wayne Echerson, director of research at The Data Warehousing Institute in Seattle. People will increasingly turn to technology that geographically displays data not only for relief efforts but also for commercial purposes, such as identifying potential customers or breaking down sales by region, he said. **■ 87742**



MORE ONLINE

A team of volunteers led by a Ohio State University professor used GIS technology to predict storm damage and track victims.

QuickLink 87743
www.computerworld.com

BRIEFS

Unisys Posts Loss, Cuts 3,600 Jobs

Blue Bell, Pa.-based Unisys Corp. said it will cut 3,600 jobs and divest parts of its business over the next year, after reporting a preliminary third-quarter net loss of \$64.3 million, or 10 cents per share. The company declined to reveal its divestiture plans but did say it will now focus its efforts on outsourcing, open-source and Linux, Microsoft products, and security products.

SAP Revenue Gains Boost Q3 Forecast

Strong third-quarter business revenue prompted SAP AG to raise its half-year forecast. SAP now expects 12% to 14% business sales growth versus its earlier projection of 10% to 12%.



Motorola, Palm to Promote Linux

Schaumburg, Ill.-based Motorola Inc. and Sunnyvale, Calif.-based PalmSource Inc. are among the companies banding up behind a new initiative to promote the use of Linux on cell phones. The Mobile Linux Initiative was launched by Open Source Development Labs Inc. to tackle technical challenges and speed Linux on handheld devices.

Anteon Pays \$315M for Milestone Group

IT services firm Anteon International Corp. has acquired Milestone Group LLC, a provider of IT professional services and solutions to U.S. government clients. With the deal, valued at \$315 million, Fairfax, Va.-based Anteon gains Arlington, Va.-based Milestone Group's enterprise architecture and systems, information assurance, and program and financial management practices.

ON THE MARK



Online Personal Assistant Does...

...almost everything, except fetch coffee or fix paper jams in the copier. According to Patrick Grady, CEO of Rearden Commerce Corp. in San Mateo, Calif., the Web-based Rearden Employee Business service can book travel plans for workers and apply corporate



policies and rates with approved business partners, as well as individual personal preferences. Grady says that the on-line service

integrates with Notes, Outlook "and any groupware," it can arrange business meetings and make appointments in participants' calendars. (Even ardent Mac users will get iCal integration in the coming year.) The service allows users to know where you are, Grady says, so it knows whether to book your next business meal in Chicago or Shanghai. And because it knows your rank inside the company, it'll know whether your expense account tolerates meals served at establishments boasting three Michelin stars or sports bars featuring burgers and beer. In Q4 of next year, Rearden will start

booking tickets to concerts and other events and open its application programming interface so the service can be linked to other applications and online services. Grady says. These days, workers are often left to fend for themselves on basic business tasks, he says, claiming that his service can be as good as a top-notch administrative assistant.

Free source-code service means...

...No Excuses - Barely. Douglas Levin thinks CIOs have been reluctant to check whether their internally developed applications are rife with open-source code and thus potentially fraught with violations of open-source licenses. So the CEO of Black Duck Software Inc. in



HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

Waltham, Mass., is giving away its source-code evaluation service until year's end (and maybe even after that, Levin hints). You can arrange to have as much as 25MB of your source code evaluated for nothing. Nada. Zip. Yes, free. Previously, Black Duck charged up to \$25,000 for the analysis, which takes a couple of days. Now, argues Levin, "companies have no excuses not to find out what's in their code." Hence the service's name: No Excuses.

Development tool lets and users create...

... Web front-ends to corporate databases. Alpha Five Version 7, which ships this week, "lets you build pretty sophisticated Web database applications with little or no programming experience," promises Richard Rabins, co-chairman of Alpha Software Inc. in Burlington, Mass. End users can point and click their way through the creation of a user interface, link to back-end databases and even define security and data access rights down to the field level of their front-end apps. Rabins says Version 7 eliminates the need to program with PHP, Perl or other scripting tools. The Alpha Five application-build tool costs \$349 for a single desktop PC. The run-time server software costs \$649 and comes with an unlimited user license.

Data archiving tool can pause...

...the process, then resume operations. That's only one of about 300 new features in its Outrigger 5.0's two editions, says Michael Howard, CEO of Outrigger Technologies Inc. in Cupertino, Calif. He says the pause-and-resume feature in Outrigger 5.0 Enterprise Edition allows system resources being used during archiving to be diverted to other tasks when necessary without har-

ing to start the archiving from scratch once those resources are freed up again. In addition, archiving performance has



doubled due to improved bulk-loading techniques, Howard claims. As part of its Compliance Edition, which supports long-term data retention, Outrigger has added adapters for WORM (write-once, read-many) optical devices from the major storage manufacturers. Outrigger 5.0 ships on Nov. 15. Pricing wasn't disclosed.

Protect your field techs from...

...harsh weather and other hazards. Joel Bomgar, CEO of NetworkStreaming Inc. in Ridgeland, Miss., says he was burned out, so to speak, from having to "spend a lot of time on the road in the Mississippi heat" traveling to user sites to troubleshoot systems. So he developed his SupportDesk appliance and software. The device sits in your data center, where end users access it via a help desk icon or a URL. Once they reach SupportDesk, troubled users click on a link to an available help desk technician. End users give techs explicit permission to take control of their PCs but can always regain control by moving their mouse, or they can use the mouse to show how the problem manifests itself. SupportDesk works with PCs running Windows 95 and beyond. Pricing starts at \$3,300. © 87760



NetworkStreaming's SupportDesk



Your data
sleeps well
at night.

secured by the built-in power of Hitachi

1. Storage by Hitachi

HITACHI
Inspire the Next

Cisco Adds Switch Support To Endpoint Security Tools

Expands NAC products beyond routers, but users may face hardware upgrades

BY JANKIRAN VIJAYAN

AS CUCERAS OF Cisco Systems Inc.'s Network Admission Control (NAC) technologies, announced last week, adds wider hardware support and several features designed to help companies better protect their networks against insecure endpoint devices.

But network managers and analysts said the fact that the NAC offering is supported only on relatively new networking equipment from Cisco is likely to limit its appeal.

"I think they're moving in the right direction," said Jim Kirby, a network engineer at Wells Dairy Inc. in Le Mars, Iowa. But adopting NAC anytime soon would be a chal-

lenge because of the upgrades that the ice cream processor would have to make to its network infrastructure, he said.

As part of the NAC initiative, Cisco is selling a line of tools that can permit, restrict or deny admission to corporate networks based on the security status of end-user systems. The products include agent software for collecting security data from client systems, network appliances that enforce security rules and a policy management server.

Until now, the technology has been available only on Cisco's routers. But the company said it plans to add support for NAC to its Catalyst switches by the end of next month. And as of last week, the products

could be used with Cisco's wireless networking devices.

Cisco is also making it possible for companies to enforce security policies on systems they don't own, such as PCs belonging to contractors and business partners. Cisco is delivering the agentless capability in conjunction with security vendors Alliris Inc., Qualys Inc. and Symantec Corp.

Extending Its Reach

Bob Gleichauf, chief technology officer for Cisco's Security Technology Group, said that more than 160 other vendors are participating in the NAC program, up from the three partners Cisco had when it shipped an initial set of products in June 2004.

The fact that Cisco has finally extended NAC support to its switches should make the technology more interest-

ing to IT managers, said Joel Conover, an analyst at Current Analysis Inc. in Sterling, Va.

"The closer to the PC or the endpoint that you can provide enforcement, the less chance that some malicious software that is on one PC can spread to others," he said.

Even so, the availability of NAC on only Cisco's equipment could be of some concern to users who don't want to get locked into a proprietary technology. Conover noted. He added that the cost of upgrading to new routers and switches is another potential roadblock for users.

Those are some of the reasons why Triplos Inc. won't be able to adopt NAC in the foreseeable future, said Jerry Windrode, a senior network architect at St. Louis-based drug research company.

Triplos uses software from InfoExpress Inc. in Mountain View, Calif., to enforce security policies on the systems of remote employees. The company has developed a home-grown tool for detecting and

NEW PRODUCTS

Cisco also had other NAC announcements.

Network Admission Control (NAC)
Cisco Systems Inc.
Mountain View, Calif.
Price: \$10,000 to \$100,000

Network Admission Control (NAC)
Cisco Systems Inc.
Mountain View, Calif.
Price: \$10,000 to \$100,000

preventing unauthorized PCs from connecting to its LAN.

Both capabilities are available as part of NAC. But upgrading the switches and network management software Triplos now uses would cost \$160,000 to \$200,000. Upgrading the InfoExpress suite so it could replace Triplos' home-grown tool, on the other hand, would cost less, at \$60,000, said Windrode. **© 57739**

MORE ON THIS TOPIC

The cost of doing nothing to secure network endpoints is getting higher and higher, says Robert L. Perry. **Page 35**

Users Offer Tips for Negotiating With Siebel

For better prices, spell out goals, buy in volume

BY MARC L. SONOINI
DOSTON

As the market leader for CRM software, Siebel Systems Inc. has a reputation as a tough negotiator on price.

But several attendees at Siebel's CustomerWorld user event here last week said it's possible to pay reasonable prices for its software — and offered tips on how to do it.

"Pricing was an obstacle," said Robert Martens, director of global front-office technology at Ingersoll-Rand Co., during a customer forum at the conference. "Initially, it was stickier shock," he said of the company's negotiations with Siebel. "The published price is pretty high."

With that in mind, Ingersoll-Rand initiated a series of dia-



logues with Siebel, he said. "It took some time for us to get them familiar with our business model," Martens said. "Once they understood our direction and purpose, it was easy."

A plan for Ingersoll-Rand is that it deploys both hosted and in-house Siebel pricing, configuration and call center software. That allows divisions that can't justify an expensive rollout to experiment with the hosted version of Siebel's soft-

ware, Siebel OnDemand, "without the CFO crashing down on them," said Martens. Historically, Siebel has had a take-no-prisoners attitude toward price negotiations, said Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Berkeley, Calif. "If you wanted the best CRM, you had to pay for it."

At Pitney Bowes Inc., Siebel licenses are purchased at the corporate level, said William Geronimo, director of applications development for CRM information systems. The Stamford, Conn.-based mail-sorting systems provider runs Siebel's customer service, call center and sales force automation software.

When Pitney Bowes started rolling out Siebel applications five years ago, officials saved thousands of dollars by purchasing in volume and spreading the software throughout the enterprise, Geronimo said.

A business unit that wants access to the applications is responsible for buying its own hardware and consultancy services and paying its own infrastructure costs, he said.

Pitney Bowes also avoided buying too many licenses, Geronimo said. "We had a good projection of what we needed and hit it about right," he noted.

Electronic Data Systems Corp. found Siebel to be flexible during price negotiations, according to J.R. Jesson, chief technology officer for the applications and industry frameworks portfolio at the integrator. EDS uses several Siebel applications, including Customer Order Management and Business Analytics.

In its negotiations with Siebel, EDS used a "creative dialogue," laying out both its long- and short-term objectives, Jesson said. "EDS set the tone that we didn't want a [single] sales event, but rather an ongoing, long-term relationship," Jesson said. "This

has borne fruit beyond the deal. We are working closely with Siebel at both the marketing and technical levels."

A Siebel spokesman suggested that customers first consider the value provided by applications rather than simply price. There are multiple elements involved in buying software and the license fee is just one of them, he said.

Siebel's recently introduced Version 7.7 of its applications cuts down on the total cost of ownership, the spokesman said. And some users might find Siebel OnDemand more convenient and flexible in terms of pricing, he said.

"We're not shoving a deployment model down someone's throat," he added. **© 57738**

LOOKING AHEAD

Siebel said Siebel OnDemand talks about the company's past — and its future as part of Oracle. **OracleLink 57739**

There at the CustomerWorld event were several other Oracle's acquisition of Siebel.

OracleLink 57734
www.computerworld.com

Cisco Adds Switch Support To Endpoint Security Tools

Expands NAC products beyond routers, but users may face hardware upgrades

BY JANAMUR VIJAYAN

AN UPGRADE of Cisco Systems Inc.'s Network Admission Control (NAC) technology, announced last week, adds wider hardware support and several features designed to help companies better protect their networks against insecure endpoint devices.

But network managers and analysts said the fact that the NAC offering is supported only on relatively new networking equipment from Cisco is likely to limit its appeal.

"I think they're moving in the right direction," said Jim Kirby, a network engineer at Wells Dairy Inc. in Le Mars, Iowa. But adopting NAC anytime soon would be a chal-

lenge because of the upgrades that the ice cream processor would have to make to its network infrastructure, he said.

As part of the NAC initiative, Cisco is selling a line of tools that can permit, restrict or deny admission to corporate networks based on the security status of end-user systems. The products include agent software for collecting security data from client systems, network appliances that enforce security rules and a policy management server.

Until now, the technology has been available only on Cisco's routers. But the company said it plans to add support for NAC to its Catalyst switches by the end of next month. And as of last week, the products

could be used with Cisco's wireless networking devices.

Cisco is also making it possible for companies to enforce security policies on systems they don't own, such as PCs belonging to contractors and business partners. Cisco is delivering the agentless capability in conjunction with security vendors Altrix Inc. Quays Inc. and Symantec Corp.

Extending Its Reach

Bob Gleichauf, chief technology officer for Cisco's Security Technology Group, said that more than 60 other vendors are now participating in the NAC program, up from the three partners Cisco had when it shipped an initial set of products in June 2000.

The fact that Cisco has finally extended NAC support to its switches should make the technology more interest-

ing to IT managers, said Joel Converter, an analyst at Current Analysis Inc. in Sterling, Va.

"The closer to the PC or the endpoint that you can provide enforcement, the less chance that some malicious software that is on one PC can spread to others," he said.

Even so, the availability of NAC on only Cisco's equipment could be of some concern to users who don't want to get locked into a proprietary technology, Converter noted. He added that the cost of upgrading to new routers and switches is another potential roadblock for users.

Those are some of the reasons why Triplos Inc. won't be able to adopt NAC in the foreseeable future, said Jerry Winthrope, a senior network architect at the St. Louis-based drug research company.

Triplos uses software from InfoExpress Inc. in Mountain View, Calif., to enforce security policies on the systems of remote employees. The company has developed a homegrown tool for detecting and

preventing unauthorized PCs from connecting to its LAN.

Both capabilities are available as part of NAC. But upgrading the switches and network management software Triplos now uses would cost \$660,000 to \$700,000. Upgrading the InfoExpress suite so it could replace Triplos' homegrown tool, on the other hand, would cost less, at \$60,000, said Winthrope. **© 57798**

MORE ON THIS TOPIC

The cost of doing nothing to secure network endpoints is getting higher and higher, says Robert L. Michael. **Page 38**

Users Offer Tips for Negotiating With Siebel

For better prices, spell out goals, buy in volume

BY MAREL L. BORDOWITZ

As the longest leader for CRM software, Siebel Systems Inc. has a reputation as a tough negotiator on price.

But several attendees at Siebel's Customer World user event here last week said it's possible to pay reasonable prices for its software—and offered tips on how to do it.

"Pricing was an obstacle," said Robert Martens, director of global front-office technology at Ingersoll-Rand Co., during a customer forum at the conference. "Initially, it was sticker shock," he said of the company's negotiations with Siebel. "The published price is pretty high."

With that in mind, Ingersoll-Rand initiated a series of dis-

cussions with Siebel, he said. "It took some time for us to get them familiar with our business model," Martens said. "Once they understood our direction and purpose, it was easy."

A plus for Ingersoll-Rand is that it deploys both hosted and in-house Siebel pricing, configuration and call center software. That allows divisions that can't justify an expensive rollout to experiment with the hosted version of Siebel's soft-

ware, Siebel OnDemand, "without the CFO crashing down on them," said Martens. Historically, Siebel has had a take-no-prisoners attitude toward price negotiations, said Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Berkeley, Calif. "If you wanted the best CRM, you had to pay for it."

At Pitney Bowes Inc., Siebel licenses are purchased at the corporate level, said William Geromino, director of applications development for CRM information systems. The Stamford, Conn.-based mail-sorting systems provider runs Siebel's customer service, call center and sales force automation software.

When Pitney Bowes started rolling out Siebel applications five years ago, officials saved thousands of dollars by purchasing in volume and spreading the software throughout the enterprise, Geromino said.

A business unit that wants access to the applications is responsible for buying its own hardware and consultancy services and paying its own infrastructure costs, he said.

Pitney Bowes also avoided buying too many licenses, Geromino said. "We had a good projection of what we needed and hit it about right," he noted.

Electronic Data Systems Corp. found Siebel to be flexible during price negotiations, according to J.R. Jensen, chief technology officer for the applications and industry frameworks portfolio at the integrator. EDS uses several Siebel applications, including Customer Order Management and Business Analytics.

In its negotiations with Siebel, EDS used a "creative dialogue," laying out both its long- and short-term objectives, Jensen said. "EDS set the tone that we didn't want a [single] sales event, but rather an ongoing, long-term relationship," Jensen said. "This

has borne fruit beyond the deal. We are working closely with Siebel at both the marketing and technical levels."

A Siebel spokesman suggested the value provided by applications rather than simply price. There are multiple elements involved in buying software, and the license fee is just one of them, he said.

Siebel's recently introduced Version 7.7 of its applications cuts down on the total cost of ownership, the spokesman said. And some users might find Siebel OnDemand more convenient and flexible in terms of pricing, he said.

"We're not showing a deployment model down our throats," he added. **© 57798**

LOOKING AHEAD

Siebel exec Bruce Cleveland talks about the company's past—and its future as part of Oracle. **CircleLink 57798**

Users at the Customer World event were asked about Oracle's acquisition of Siebel.

CircleLink 57794
www.computerworld.com



MORE SECURITY CHOICES FOR MORE BUSINESS CONFIDENCE.

With ProCurve Networking by HP, you choose from a comprehensive set of security solutions—each designed to help protect your growing company. You get exclusive products like ProCurve Secure Router, Virus Throttle, Identity Driven Management and Access Controller Module. And unlike most other providers, ProCurve ensures critical network security at the edge where users connect as well as at the vulnerable core. Edge-to-edge security means less downtime, more uptime. ProCurve means more security, more affordably.



Find out more about ProCurve Networking. Call 800-975-7684 Ref Code 53 or download informative reports complete with case studies and cost-of-ownership analysis at www.hp.com/learn/procurve3.



Peace of Mind

Securing the network at the edge keeps business out of harm's way



It was the CFO

who posed the "show-stopper" question at a recent executive committee meeting: "With all the resources and attention businesses are expending on security, why are we still besieged with continuous threats from viruses, worms, and hackers?"

He wasn't overreacting to the problem. Today an estimated 100,000 viruses, worms, and Trojan horses pose direct threats to network computer assets. The cost of system downtime stemming from attacks can often be measured in thousands of dollars per minute, and the theft of sensitive data carries tremendous potential liability. So it's no wonder security remains a top priority for business and technology managers alike.

The truth is that current methods and strategies for securing corporate networks often fall short. Many companies use virus signature scanning techniques, but these technologies alone are not sufficient since they do not detect new forms of viruses and they depend on human response. Once in the network, a virus propagates at machine speed, which is orders of magnitude faster than the "human-speed" responses to them.

WHAT USERS WANT

Clearly, businesses need a complete solution that truly delivers security without compromise to protect networks and the mission-critical data that runs over them. A checklist of the features of such a solution should include:

- ✓ Simplicity for administrators and transparency for users
- ✓ Ease of deployment and flexibility
- ✓ Security built-in and integrated with the hardware, not bolted on
- ✓ Security at the critical network edge where users connect

This is exactly what users get, and a lot more, with Hewlett-Packard's ProCurve Networking solutions, engineered to move vital network access decisions to the network edge while freeing essential network resources to enable the high-bandwidth connections they are supposed to provide. By concentrat-

ing security at the edge, HP ProCurve further enables support for vital network convergence and burgeoning mobile strategies. The result is a solution without tradeoffs between ease of use and performance versus capability. ProCurve Networking offers security without compromise.

A key and unique element of the ProCurve solution is virus-thwarting functionality built directly into ProCurve switches. This highly effective hardware against viruses provides detection at the network edge based on traffic behavior, not virus signature analysis. The bandwidth on the port where the attack is detected can be throttled back or the port traffic can be completely contained. This functionality gives the IT staff the time it needs to first isolate and then eliminate viruses and worms before they cause system-crashing damage.

THE ULTIMATE IN NETWORK SECURITY

Unlike other virus detection technologies, the virus-thwarting feature does not need preknowledge of specific worms and viruses to do its job because virus thwarting is behavior-based. ProCurve switches with virus thwarting can divert or non-routable traffic, or completely block traffic from a suspect client.

Not all virus attacks come from external sources outside of a network. It is increasingly important to protect access to the internal network behind the firewall to prevent virus attacks and threats to critical systems. Using ProCurve solutions, users effectively move security to the network edge, where trouble can be resolved before any damage is done to business-critical data. ProCurve's value proposition delivers intelligent security with ease of use, without sacrificing performance.

The bottom line is that with its many unique, powerful, and adaptable features, HP ProCurve Networking delivers on the core and essential value propositions of high network availability, efficiency, security, ease of use, and open-standard-based interoperability. For more information, go to www.hp.com/learn/procurve.

COMPUTERWORLD

100 PREMIER IT LEADERS SOUTHEAST SUMMIT

Need Peer Advice on Reducing IT Complexity?

Find Proven Strategies at Our Complimentary,*
Half-day Conference

8:30am to 12:45pm • October 27, 2005 • JW Marriott Grande Lakes Resort • Orlando, Florida



Conquering IT Complexity

Consolidation and Integration
Strategies for Creating Competitive
Advantage

- Services-oriented Architecture
- Web Services
- Pruning Redundant Software
- The "Virtual" Enterprise, Virtual Servers
and Grid Computing
- Simplifying Security
- Incremental Innovation Through
Data/Application Integration

To apply for complimentary registration:

- Visit www.premier100.com/regional
- Or call Chris Leger at 888-299-0155

*Complimentary registration is limited to qualified
IT end user professionals.

Summit Agenda

8:00am - 8:30am

8:30am - 8:45am

Registration and Networking Breakfast

Welcome and Opening Remarks
Julie King, Executive Editor and National
& Correspondent, Computerworld

8:45am - 9:30am

**Members Don't Lie: Benchmarking
Data Proves That Reducing IT
Complexity Cuts Costs Across Other
Business Functions**
Alan Frank, President & Chief Technology Officer,
Anerwin, Inc. and Saver Hackett II, Fellow

9:30am - 10:00am

**Stretching Costs and Complexity With
Open Source Software and
Community Hardware**
Dan Agnew, Chief Information Officer, The
Weather Channel Interactive, Inc.

10:00am - 10:30am

The Agile IT Infrastructure
Frank Erlento, Vice President, Health Care
Services System Delivery, Blue Cross/Blue
Shield of Massachusetts

10:30am - 11:00am

Refreshment and Networking Break

11:00am - 11:30am

Standardizing IT for Business Growth
Joe Pugliese, Vice President and Chief
Information Officer, EMCOR Group, Inc.

11:30am - Noon

**Project Virtual Gateway:
Streamlining Health Services Delivery**
in Massachusetts
Luisa Gutierrez, Chief Technology Strategist,
Commonwealth Medicine, University of
Massachusetts Medical School

Noon - 12:45pm

**Panel Discussion -
Building out of the Technology Tangle**
Moderator: Dan Yarnert, Vice President,
Editor in Chief, Computerworld

Panelists: Alan Frank, President and Chief Technology
Officer, Anerwin, Inc. and Saver Hackett II, Fellow
Dan Agnew, Chief Information Officer, The Weather
Channel Interactive, Inc.; Frank Erlento, Vice President,
Health Care Services System Delivery, Blue Cross/Blue
Shield of Massachusetts; Joe Pugliese, Vice President and
Chief Information Officer, EMCOR Group, Inc.; Luisa
Gutierrez, Chief Technology Strategist, Commonwealth
Medicine, University of Massachusetts Medical School

12:45pm - 2:00pm

2:00pm

Networking Lunch

Program Concludes

To sponsor, call Chris Leger at 888-299-0155.

Owned and Produced by
COMPUTERWORLD
The Voice of IT Management

BRIEFS

Wild Creator Joins Eclipse Foundation

Microsoft Corp. researcher Ward Cunningham, developer of the wild concept, is joining the Eclipse Foundation, according to a web posting by Eclipse Executive Director Mike Mitnick. Cunningham will help the non-profit foundation improve collaboration and cooperative efforts among members. Cunningham was an architect in Microsoft's patterns and practices group.

CEO Cites Strengths in IBM's Results

Though IBM's profits declined slightly in the third quarter, CEO Samuel Palmisano said the results showed strengths in hardware, software and services.

	Q3 '05	Q3 '04
Revenue	\$24.9B	\$24.9B
Profit	\$2.1B	\$2.1B

CA Buys E-mail, IM Management Firm

Computer Associates International Inc. has agreed to buy Lumen Software Services Inc. as part of an effort to offer software that manages and archives e-mail and instant messages. The Lumen software, which competes with offerings from EMC Corp., IBM, Symantec Corp. and smaller firms, can help corporations ensure compliance with regulations such as the Sarbanes-Oxley Act and the Health Insurance Portability and Accountability Act.

Red Hat Co-founder Resigns Board Seat

Bob Young, co-founder and former executive of Red Hat Inc., has resigned from the Linux software provider's board of directors. Young, who founded the company in 1993, served in executive posts until 1998. He plans to focus on the growth of Lulu.com, an online independent publishing marketplace he founded in 2002.

New Obstacles Dogging Outsourcing Customers

Compliance requirements, lack of experienced workers sink some deals

BY THOMAS HOFFMAN
NEW YORK

OUTSOURCING deals in IT have long been marred by poor communications between buyers and suppliers, along with failures by customers to adequately manage the relationship and measure performance.

At the OutsourcingWorld conference here last week, users and analysts said outsourcing customers are now facing new challenges, including regulatory requirements and shortages of experienced outsourcing relationship and contract managers.

Joann Martin, vice president and director of solutions marketing at Pitney Bowes Inc. in Stamford, Conn., listed compliance with foreign and domestic regulations as a significant challenge for both outsourcing customers and providers.

For example, she cited the need for outsourcing to provide customers with State-mandated full business Standards No. 70 (SAS 70) reports to attest that outsourcing firms have internal controls in place to help their customers comply with the Sarbanes-Oxley Act and other regulations.

Sometimes, outsourcing complete SAS 70 reports months before submitting them to customers, thus raising questions about whether they are valid and up to date, said Michael Corbett, executive director of the International Association of Outsourcing Professionals (IAOP) in Lagrangeville, N.Y.

On the other hand, said Martin, regulations can sometimes be beneficial. For instance, new patent-protection regulations in India prompted Pitney Bowes to change its stance on the idea of outsourcing product development to companies in that country, she said.

Pitney Bowes is both a provider of document management outsourcing and a user of IT outsourcing services, having redirected 75% of its IT activities to outsourcing, said Martin.

Examining the Issues

"Ninety percent of outsourcing deals fail because customers don't measure the results of the work being done," said Keith Fiverson, managing consultant at ITESA, a New York-based consulting firm. In addition, customers are

Cutting the Cord



having a "tough time" finding people with experience in managing outsourcing contracts or relationships with outsourcing providers, he said.

The growing number of impediments to outsourcing appears to be forcing companies to rethink commitments to the strategy. According to a study of 210 outsourcing customers and 242 providers published by DiamondChamber International Inc. in June, the number of customers prematurely ending both domestic and off-shore outsourcing contracts within a year jumped from 21% in 2004 to 59% this year.

Tom Weekland, a managing partner at the Chicago-based management consulting firm, said the chief driver for cus-

tom dissatisfaction is heightened competition for staff among suppliers, leading to increased turnover and "more issues and more delays" for customers.

Burnout is another problem, according to Tarun Mehta, a managing director at Neo-IT.com Inc., a San Ramon, Calif.-based consultancy. Managers who oversee offshoring outsourcing deals often must wake up before dawn to connect with the offshore team. A few hours later, the manager goes to the office and puts in a full workday. That schedule "might work for a week or two, but after six months, the project begins to slip," Mehta said.

He said sponsorship and ownership of outsourcing deals will have to take place "at a higher level in the organization than it does today" to succeed.

Martin said another barrier to successful outsourcing outcomes "is the perception that it's all about reducing costs." Too many customers fail to recognize other business value that can be derived from the relationship, she said.

For instance, Nokia Corp. is considering outsourcing a substantial portion of its research and development in an effort to reduce R&D costs to less than 10% of revenue, said the IAOP's Corbett. In addition to cutting costs, Nokia is looking to outsource much of its extensive R&D work in order to free up internal workers "to focus more on those areas that differentiate their products," Corbett said. **EW730**

Use of Home-based Agents Challenging

COMPANIES such as Office Depot Inc. and 1-800-Flowers.com Inc. that have outsourced customer service have begun to use home-based agents have had to overcome some unique challenges.

The biggest challenge for Office Depot when it began outsourcing sales and service support to Golden, Colo.-based Alpine Access Inc. five years ago "was convincing people that

quality wouldn't erode," said Jennifer Carter, director of operations and strategic partnerships at the Delray Beach, Fla.-based retailer.

To overcome those fears, Office Depot assigns workers to listen in on customer calls periodically to ensure that agents are meeting productivity targets and adhering to quality requirements. Office Depot personnel make sure that agents follow up on

sales leads and follow the right procedures, said Carter.

The biggest concern for 1-800-Flowers before signing up Alpine Access for customer service was fears that the outsourcing firm's training capabilities wouldn't meet its needs, said Lou Ott, director of vendor relations and strategic projects at the Westbury, N.Y.-based gift retailer.

"I was 100% wrong—these guys [at Alpine Access] have built a great Web-based training

application," Ott said.

Sandy Went, vice president of sales and marketing at Alpine Access, said his firm maintains traditional customer service controls, such as call recording, reporting and supervision for the at-home workers. The company encourages its home-based agents to have high-speed Internet connections and requires that they have a second phone line for redundancy.

—Thomas Hoffman

THE BRAINS TO BACK IT UP.

PATHLIGHT VX

adic

Intelligent Storage™

Visit www.adic.com/pvx to get your free GlassHouse white paper
by W. Curtis Preston, *Evaluating Disk-Based Backup Solutions*.

Copyright 2008 Adversed Digital Information Corporation (ADIC), Redmond, WA, USA. All rights reserved. Created in USA.

GLOBAL DISPATCHES

An International IT News Digest

Indian Bank Chooses Linux for Internal Apps

BANGALORE, INDIA

CANARA BANK, a large bank that's mostly owned by the Indian government, has opted to shift the applications used at more than 1,000 of its 2,500 branch offices across India to Red Hat Enterprise Linux.

The bank is migrating internally developed branch-automation software from systems running on MS-DOS and NetWare to Red Hat Inc.'s version of Linux, said a source, at Bangalore-based Canara who asked not to be identified because of internal rules that don't allow workers to talk to the news media.

"We decided to use Linux, as it was more cost-effective, its performance

was good, and the software was open-source," the source said, adding that Canara is installing Red Hat Enterprise Linux on more than 1,000 servers and 10,000 desktop PCs.

More than 500 branches have already made the transition to the Linux

software, according to Raleigh, NC-based Red Hat.

■ JOHN RIBEIRO, 100 NEWS SERVICE

Tata Wins Outsourcing Pact With U.K. Insurer

MUMBAI, INDIA

PEARL GROUP LTD., an insurance and pensions firm in Peterborough, England, has hired Indian outsourcing vendor Tata Consultancy Services Ltd. to manage its business operations and the systems that support them.

TCS, which is based in Mumbai, valued the U.K. contract at £486 million (\$856 million U.S.) and said that the deal will create additional new revenue opportunities for the company in the U.K. beyond the IT services market.

The pact calls for TCS to run Pearl Group's operations through a new subsidiary in Peterborough. The subsidiary will employ about 950 of Pearl Group's 1,300 workers, with the balance staying on at the insurance company.

TCS said the new unit will also offer business process outsourcing services to other companies in the U.K.'s life insurance and pension industries.

■ JOHN RIBEIRO, 100 NEWS SERVICE

Capital Firm Says Aussie Innovation Needs Funds

ADELAIDE, AUSTRALIA

PLYFOUR CAPITAL, a technology investment firm based here, is warning that a national drought of start-up funding is threatening innovation within the Australian IT industry.

Plyfour Capital CEO Amanda Heyworth last week called for "business angels"—individuals who invest personal funds in private companies—to dig deep to ensure that Australia remains an attractive place to work in the high-tech sector.

"If you're not seeding new companies and innovation, you'll end up with a stagnant economy," which could lead to a "long-term problem for Australia," Heyworth said.

Plyfour Capital co-hosted the VC Connect venture capital conference in Adelaide to discuss such issues.

■ 57673

■ SANDRA ROSSI, COMPUTERWORLD TODAY (AUSTRALIA)

Compiled by Mike Bucken.

Briefly Noted

INTEL in Tokyo said it plans to install an undersea fiber-optic cable between India and Sri Lanka. NEC signed contracts with Sri Lanka Telecom Ltd. in Colombo and Bharat Sanchar Nigam Ltd. in New Delhi to construct the 320-kilometer cable.

■ MARTIN WILLIAMS, 100 NEWS SERVICE

Philips Electronics NV in Amsterdam said its profit increased 23% in the third quarter, boosted by the sale of several noncore assets. The company said net income jumped to 1.44 billion euros (\$1.73 billion), up from 1.17 billion euros (\$1.4 billion) a year earlier. Sales rose 5% to 7.63 billion euros (\$9.1 billion), up from 7.23 billion euros (\$8.6 billion).

■ JOHN BLAY, 100 NEWS SERVICE

Samsung Electronics Co. in Seoul will begin selling its second cell phone to feature a disk drive. The SPH-V7000 measures 923 millimeters by 52mm by 27.8mm and weighs 165 grams. It will cost about 735,370 South Korean won (\$700). Seoul-based Samsung also said it's building a disk-equipped phone for the European market.

■ MARTIN WILLIAMS, 100 NEWS SERVICE

Sarbanes-Oxley Adds to IT Costs But Pushes Companies to Prepare

Compliance initiatives yield processes for dealing with future rules, execs say

BY PATRICK THIBODEAU
(PHOTO)

Compliance burdens posed by the Sarbanes-Oxley Act are proving to be costly for many IT departments, according to Gartner Inc. But companies may be better equipped to meet any new federal regulations thanks to the processes they have developed for complying with the law. IT executives said here last week.

Gartner estimates that the government's Sarbanes-Oxley mandates have led to an average increase of 3.3% in corporate IT costs. The financial reporting law has spurred

increased spending in areas such as records management and security, as well as purchases of new tools needed to ensure the accuracy of financial data, the firm says.

At Eaton Corp., a Cleveland-based maker of hydraulic systems, factory automation devices and other industrial products, regulatory compliance issues have boosted IT spending by about 1%, or \$3 million, according to CIO Robert Sell.

But Sell, who took part in a panel discussion at Gartner's Symposium/ITxpo 2005 conference here, added that if

new federal regulations emerge, his strategy will be to rely on the same processes that Eaton set up to ensure Sarbanes-Oxley compliance. He now has one office that manages the IT issues associated with the law in addition to intellectual property protection and data privacy.

"We are going to leverage the people and resources across those disciplines," Sell said.

Other IT managers agreed that the corporate response needed for complying with Sarbanes-Oxley is providing organizational governance and educational frameworks that should help them to deal with compliance in the future.

Gint Dargis, CIO at Richardson Electronics Ltd. in LaFon,

What a great opportunity—especially for people in IT—to demonstrate some leadership.

ROBERT SELL, CIO, EATON CORP.

Ill., said the maker of radio-frequency and wireless components now has the ability "to scope out the impact to the company" if new mandates materialize.

Moreover, regulations "are coming together—these things are not going apart," said Jim Maglino, senior information systems director at West Pharmaceutical Services Inc., a Lisle, Ill., based company that makes components for syringes, IVs and other medical devices. To illustrate his point, Maglino

said that many of the requirements posed by Sarbanes-Oxley also apply to health care regulations, such as the Health Insurance Portability and Accountability Act.

The one thing companies can't do is treat regulatory mandates lightly, warned panel members.

It's important to ensure that top executives and board members take compliance seriously enough, said Ken Coleman, chairman and CEO of TTM Software Corp., a business management tools vendor in Mountain View, Calif. "This is superimportant. The consequences [of not complying] are significant."

Sell noted that helping a company meet its regulatory requirements is a task IT managers should willingly step up to. "What a great opportunity—especially for people in IT—to demonstrate some leadership," he said. ■ 57741



GLOBAL

An International IT News Digest

Indian Bank Chooses Linux for Internal Apps

BANGALORE, INDIA

CANARA BANK, a large bank that's mostly owned by the Indian government, has opted to shift the applications used on more than 1,000 of its 2,500 branch offices across India to Red Hat Enterprise Linux.

The bank is migrating internally developed branch-automation software from systems running on MS-DOS and NetWare to Red Hat Inc.'s version of Linux, said a source at Bangalore-based Canara who asked not to be identified because of internal rules that don't allow workers to talk to the news media.

"We decided to use Linux, as it was more cost-effective, its performance was good, and the software was open-source," the source said, adding that Canara is installing Red Hat Enterprise Linux on more than 1,000 servers and 10,000 desktop PCs.

More than 500 branches have already made the transition to the Linux

software, according to Raleigh, N.C.-based Red Hat.

■ JOHN RIBEIRO, IDC NEWS SERVICE

Tata Wins Outsourcing Pact With U.K. Insurer

MUMBAI, INDIA

PEARL GROUP LTD., an insurance and pension firm in Peterborough, England, has hired Indian outsourcing vendor Tata Consultancy Services Ltd. to manage its business operations and the systems that support them.

TCS, which is based in Mumbai, valued the 12-year contract at \$486 million (\$856 million U.S.) and said that the deal will create additional new revenue opportunities for the company in the U.K. beyond the IT services market.

The pact calls for TCS to run Pearl Group's operations through a subsidiary in Peterborough. The subsidiary will employ about 950 of Pearl Group's 1,100 workers, with the balance staying on at the insurance company.

TCS said the new unit will also offer business process outsourcing services to other companies in the U.K.'s life insurance and pension industries.

■ JOHN RIBEIRO, IDC NEWS SERVICE

Capital Firm Says Aussie Innovation Needs Funds

ADELAIDE, AUSTRALIA

PLAYFORD CAPITAL, a technology investment firm based here, is warning that a national drought of start-up funding is threatening innovation within the Australian IT industry.

Playford Capital CEO Amanda Heyworth last week called for "business angels" — individuals who invest personal funds in private companies — to dig deep to ensure that Australia remains an attractive place to work in the high-tech sector.

"If you're not seeding new companies and innovation, you'll end up with a stagnant economy," which could lead to "a long-term problem for Australia," Heyworth said.

Playford Capital co-hosted the VC Connect venture capital conference in Adelaide to discuss such issues.

■ S2673

■ SANORA ROSSI, COMPUTERWORLD TODAY (AUSTRALIA)

Compiled by Mike Bucken.

Briefly Noted

NEC Corp. in Tokyo said it plans to install an end-to-end Blue-eclipse cable between India and Sri Lanka. **NEC signed contracts with Sri Lanka Telecom Ltd.** in Colombo and Bharat Sanchar Nigam Ltd. in New Delhi to construct the 320-kilometer cable. ■ MARTIN WILLIAMS, IDC NEWS SERVICE

Philips Electronics NV in Amsterdam said its profit increased 25% in the third quarter, boosted by the sale of several consumer assets. The company said net income jumped to 1.44 billion euros (\$1.73 billion), up from 1.17 billion euros (\$1.4 billion) a year earlier. Sales rose 9% to 7.66 billion euros (\$9.1 billion), up from 7.23 billion euros (\$8.6 billion). ■ JOHN BLAU, IDC NEWS SERVICE

Sevenson Electronics Co. said its week will begin selling its second set of plans to feature a disk drive. The SPV-47000 measures 100 millimeters by 100 mm by 10 mm and weighs 160 grams. It will cost about \$24,970. South Korean unit (SPV) Seoul-based Sevenson also said it's building a disk-equipped phone for the European market. ■ MARTIN WILLIAMS, IDC NEWS SERVICE

Sarbanes-Oxley Adds to IT Costs But Pushes Companies to Prepare

Compliance initiatives yield processes for dealing with future rules, execs say

BY PATRICK THIBODEAU ORLANDO

Compliance burdens posed by the Sarbanes-Oxley Act are proving to be costly for many IT departments, according to Gartner Inc. But companies may be better equipped to meet any new federal regulations thanks to the processes they have developed for complying with the law. IT executives said here last week.

Gartner estimates that the government's Sarbanes-Oxley mandates have led to an average increase of 3.3% in corporate IT costs. The financial reporting law has spurred

increased spending in areas such as records management and security, as well as purchases of new tools needed to ensure the accuracy of financial data, the firm says.

At Eaton Corp., a Cleveland-based maker of hydraulic systems, factory automation devices and other industrial products, regulatory compliance issues have boosted IT spending by about 1%, or \$3 million, according to CIO Robert Sell.

But Sell, who took part in a panel discussion at Gartner's Symposium/ITxpo 2005 conference here, added that if

new federal regulations emerge, his strategy will be to rely on the same processes that Eaton set up to ensure Sarbanes-Oxley compliance. He now has one office that manages the IT issues associated with the law in addition to intellectual property protection and data privacy.

"We are going to leverage the people and resources across those disciplines," Sell said.

Other IT managers agreed that the corporate response needed for complying with Sarbanes-Oxley is providing organizational, governance and educational frameworks that should help them to deal with compliance in the future.

Gint Dargis, CIO at Richardson Electronics Ltd. in LaRox,

“What a great opportunity — especially for people in IT — to demonstrate some leadership.”

ROBERT SELL, CIO, EATON CORP.

Ill., said the maker of radio-frequency and wireless components now has the ability "to scope out the impact to the company" if new mandates materialize.

Moreover, regulations "are coming together — these things are not going away," said Jim Magliano, senior information systems director at West Pharmaceutical Services Inc., a Lionville, Pa.-based company that makes components for syringes, IVs and other medical devices. To illustrate his point, Magliano

said that many of the requirements posed by Sarbanes-Oxley also apply to health care regulations, such as the Health Insurance Portability and Accountability Act. "The one thing companies can't do is treat regulatory mandates lightly, warned panel members.

It's important to ensure that top executives and board members take compliance seriously enough," said Ken Coleman, chairman and CEO of ITM Software Corp., a business management tools vendor in Mountain View, Calif. "This is superimportant. The consequences [of not complying] are significant."

Sell noted that helping a company meet its regulatory requirements is a task IT managers should willingly step up to. "What a great opportunity — especially for people in IT — to demonstrate some leadership," he said. ■ S791

**We deliver something for your
network you thought was lost forever.**

Control.

**It's time for you to take back your
network. And the 3Com TippingPoint[®]
security solution is the way to do it.**

**But don't take our word for it. Take
the word of *SC Magazine*. They awarded
us Best Security Solution 2005.***

**And if you think they've got good
things to say, go to our website and
hear from our customers.**



security
VoIP
wireless
switching
routing
services

3com.com/AdvanceTheNetwork

*SC Magazine awarded TippingPoint Intrusion Prevention System, formerly known as OnGuard[™], Best Security Solution for 2005.
Copyright © 2005 3Com Corporation. All rights reserved. 3Com and the 3Com logo are registered trademarks of 3Com Corporation.
All other company and product names may be trademarks of their respective companies.

Security Products and iSCSI Arrays Set for SNW Unveiling

Disk-to-disk backup options are also expected to be featured at conference

BY LUCAS MERRIAN

SURVIVAL NETWORKING World will feature the unveiling of a dozen or more products, including data protection technology, IP storage arrays and big, cheap disk systems based on Serial ATA technology.

At the conference in Orlando this week, users can see new Internet SCSI technology, which is in demand because it's less expensive and easier to use than Fibre Channel storage-area networks (SAN), said Josh Howard, an enterprise storage specialist at IT reseller CDW Corp. in Vernon Hills, Ill.

Vendors expected to unveil iSCSI products at the conference include Intransa Inc. and JMR Electronics Inc.

San Jose-based Intransa plans to demonstrate a 10 GigaByte Ethernet iSCSI IP2000 SAN that will offer more than

twice the throughput of Fibre Channel technology. The product is slated to ship in mid-2006.

Larry Newman, senior network engineer at ARG Services Inc., a subsidiary of Air Routing Group Inc. in Houston, has installed two 4TB iSCSI SANs from Intransa. The arrays cost the company about \$240,000, which is less than the \$300,000 it would have cost for a single Fibre Channel array-SAN from EMC Corp., he said.

Newman said the iSCSI system provides 1GBit/sec. data-transfer rates and offers some disaster recovery capability by replicating data between the two iSCSI arrays, which are one and a half miles apart. The replication takes place using wireless routing technology from Cisco Systems Inc.

Chattworth, Calif.-based JMR is unveiling an array it developed with ISI Logic Corp., Intel Corp. and Left-Hand Networks Inc. An 8TB box will sell for \$33,500. The array ships on Nov. 1.

Disk-to-Disk Option

Tony Prigmore, an analyst at Enterprise Strategy Group Inc. in Milford, Mass., expects users to evaluate disk-to-disk backup systems at the conference. Such systems can either replace tape systems or act as a liaison between servers and tape backup.

CDW recently began the task of replacing its tape libraries by installing two EMC Clarion disk libraries with 6TB of capacity, said Doug Zelinka, manager of IT infrastructure. The disk-to-disk technology has boosted Zelinka's backup data-transfer rates almost tenfold—to 3,200MB/min. from the

350MB/min. rate of the tape drives, he said.

The disk backups not only reduce CDW's backup window but also help with data restores in an area of the country that is plagued by power outages, Zelinka said.

Zelinka is concerned about systems reliability in light of the number of disasters over

the past year or so. Therefore, he is exploring ways to replicate data to a new CDW distribution facility in Las Vegas.

Several vendors, including EMC, Avall Inc. and STOR-Server Inc., plan to bring out continuous data-protection products at the conference, co-sponsored by Computerworld and the Storage Net-

working Industry Association.

In addition, Hopkinton, Mass.-based EMC will introduce RecoveryPoint, a software product that allows administrators to recover data from any point in time and place markers on data in order to recover from a specific time.

RecoveryPoint is integrated with the management interface in EMC's Replication Manager software and will be integrated with the company's Legato Networker software in the first half of next year. **□ S740**

EMC Virtualization Plan is on Schedule, Executive Says

Mark Lewis, chief development officer at EMC Corp., talked to Computerworld last week about the state of the company's

Invista virtualization software, which has yet to ship in bulk. Lewis also addressed moves by EMC and Cisco Systems Inc. to sell virtualization products for the entire data center, from servers to back-end storage.

There seem to be a lot of delays in getting the Invista virtualization technology out. What's the holdup? We're really where we wanted to be with it. We said it would be in very limited availability this year. We didn't expect material impact. We didn't want to expect any volume ramp. We said customers should put it in development environments and said it was for enterprise customers. It's undergoing evaluation.

So you're not experiencing hurdles in getting this out? We very much acknowledged this was a major technology advancement. It involved new switch intelligence and a new product from us. We have a lot of customers looking at it. A reasonable number have it in their development centers.

When can customers expect



Q&A

Invista to be generally available? It's going to depend on our customers' development cycles. General availability will just be when our customers put it into production.

Do you expect Invista to be ready for mainstream use by 2006 or 2007? I think the product will start deployments into production environments early next year. The difference is that we don't expect quantities to be significant or there to be a lot of general adoption until the 2007 time frame. It's the typical ramp.

IBM and Cisco have both come out saying they're going to virtualize the data center. How is EMC going to take on that challenge? Obviously, with VMware [we] have core server virtualization technology. I think really the thing that sets us apart is we have the leading Intel-based virtualization technology today. We, with Invista, have taken the extra effort to do virtualization right in storage. We just acquired RightWare, which I believe for NAS virtualization and global name-space capability is a very highly functional set of tools. Last February, we acquired [network systems management software vendor] SmartX, which delivers many key pieces of core-storage management technology required to

connect all of these virtual elements together. The other folks talk a good line, but we're doing the heavy lifting in storage.

When you expect to have RightWare's technology integrated with your network-attached storage technology? The simple fact is... there is no integration work necessary. The nice thing also is it works across multiple platforms so we can provide for seamless virtualization across EMC, Netware Appliances and even Windows-based file systems.

Did the decision to bail out some of your NetWare Windows-powered NAS arrays indicate a movement away from Windows? No. We wanted to partner with VMware and still do that in as many areas as possible. We looked at the NetWare opportunity as just that—a way to fit out our overall NAS product line. What we clearly found is that EMC is a technology company, and there may be areas of the market where we play and don't play.

What do you think will be the hot topic at Storage Networking World next week? I think it will be information security. I think you're going to see that market hit a fairly chaotic state right now.

—Lucas Merrian

ANNOUNCEMENTS

Products to be unveiled this week at Storage Networking World:

• **DATAFURY F2000**, a 10-port star area security appliance from DataFury Inc. with 10GbE ports, encryption and compression throughput for Fibre Channel tape systems.

• **NAS 330**, a 1U/175-watt high/NAS array from Silicon Graphics Inc. with a starting price of \$25,599 for 2.6TB of capacity, which scales to 16.6TB for under \$60,000.

• **18 8600**, a clustered file storage appliance from Isilon Systems Inc. with 250TB capacity using Hitachi's 500GB Serial ATA II drives.

• **500MB SATA II DRIVES** from Microware Corp. that run at 1,200 RPM and offer a 50MB buffer and native command queuing.

• **LIFESIZE VIRTUAL HUB**, a host bus adapter from Emulex Corp. that offers enhanced SAN management and data protection.

Security Products and iSCSI Arrays Set for SNW Unveiling

Disk-to-disk backup options are also expected to be featured at conference

BY LUCAS MEARIN

STORAGE NETWORKING World will feature the unveiling of a dozen or more products, including data protection technology, IP storage arrays and big, cheap disk systems based on Serial ATA technology.

At the conference in Orlando this week, users can see new Internet SCSI technology, which is in demand because it's less expensive and easier to use than Fibre Channel storage-area networks (SANs), said Josh Howard, an enterprise storage specialist at IT reseller CDW Corp. in Vernon Hills, Ill.

Vendors expected to unveil iSCSI products at the conference include Intrinsia Inc. and JMR Electronics Inc.

San Jose-based Intrinsia plans to demonstrate a 10 Gbabit Ethernet iSCSI IP2000 SAN that will offer more than

twice the throughput of Fibre Channel technology. The product is slated to ship in mid-2000.

Larry Newman, senior network engineer at ARG Services Inc., a subsidiary of Air Routing Group Inc. in Houston, has installed two 4TB iSCSI SANs from Intrinsia. The arrays cost the company about \$90,000, which is less than the \$200,000 it would have cost for a single Fibre Channel array SAN from EMC Corp., he said.

Newman said the iSCSI system provides 1Gb/sec. data-transfer rates and offers some disaster recovery capability by replicating data between the two iSCSI arrays, which are one and a half miles apart. The replication takes place using wireless routing technology from Cisco Systems Inc.

Chattworth, Calif.-based JMR is unveiling an array it developed with LSI Logic Corp., Intel Corp. and Left-Hand Networks Inc. An 8TB box will sell for \$33,500. The array ships on Nov. 10.

Disk-to-Disk Option

Tony Prigmore, an analyst at Enterprise Strategy Group Inc. in Milford, Mass., expects users to evaluate disk-to-disk backup systems at the conference. Such systems can either replace tape systems or act as a liaison between servers and tape backup.

CDW recently began the task of replacing its tape libraries by installing two EMC Clarion disk libraries with 6TB of capacity, said Doug Zelinka, manager of IT infrastructure. The disk-to-disk technology has boosted Zelinka's backup data-transfer rates almost tenfold—to 3,300MB/min. from the

350MB/min. rate of the tape driver, he said.

The disk backups not only reduce CDW's backup window but also help with data restores in an area of the country that is plagued by power outages, Zelinka said. Zelinka is concerned about systems reliability in light of the number of disasters over

the past year or so. Therefore, he is exploring ways to replicate data to a new CDW distribution facility in Las Vegas.

Several vendors, including EMC, Avill Inc. and STOR-Server Inc., plan to bring out continuous data-protection products at the conference, co-sponsored by Computerworld and the Storage Net-

working Industry Association.

In addition, Hopkinton, Mass.-based EMC will introduce RecoveryPoint, a software product that allows administrators to recover data from any point in time and place markers on data in order to recover from a specific time.

RecoveryPoint is integrated with the management interface in EMC's Replication Manager software and will be integrated with the company's Legato Networker software in the first half of next year. **© 5790**

EMC Virtualization Plan Is on Schedule, Executive Says

Mark Lewis, chief development officer at EMC Corp., talked to Computerworld last week about the state of the company's iSeries virtualization software, which has yet to ship in bulk.

Lewis also addressed moves by rivals EMI and Cisco Systems Inc. to sell virtualization products for the entire data center, from servers to back-end storage.

There seems to be a lot of dialogue in getting the iSeries virtualization technology out. What's the history? We're really where we wanted to be with it. We said it would be in a very limited availability this year. We didn't expect material impact. We didn't want to expect any volume ramp. We said customers should put it in development environments and call it out for enterprise customers. It's undergoing evaluation.

So you're not experiencing hurdles in getting this out? We very much acknowledge this was a major technology advancement. It involved new switch architecture and a new product from us. We have a lot of customers looking at it. A reasonable number have it in their development centers.

When can customers expect

iSeries to be generally available? We going to depend on our customers' development cycles. Size and availability will just be when our customers put it into production.

Do you expect iSeries to be ready for enterprise use by 2000 or 2001? I think the product will start deployments into production environments early next year. The difference is that you don't expect quantities to be significant or there to be a lot of major adoption until the 2001 time frame. It's the typical ramp.

EMI and Cisco have both come out saying they're going to displace the data center. How is EMC going to take on that challenge? Obviously, with VMware [now] have our own virtualization technology. I think really the thing that says an expert is on time. The leading local-based virtualization technology today. We, with iSeries, have taken the same effort to do virtualization right in storage. We just acquired NextRate, which I believe for NAS virtualization and global name space capabilities is a very highly functional set of tools. Last February, we acquired [network appliance management software vendor] StorageLink, which delivers many key aspects of cross-media technology required to

connect all of these virtual environments together. The other folks talk a good line, but we're doing the heavy lifting in storage.

How do you expect to have iSeries's technology integrated with your network-attached storage technology? The simple fact is... there is no integration work necessary. The nice thing also is it will be across multiple platforms to us just require for seamless virtualization across EMC, Netware Appliances and even Windows-based file systems.

Did the decision to build rather than buy VMware technology with storage include a commercial sense when VMware? No. We wanted to partner with Microsoft and still do that in as many areas as possible. We looked at the VMware opportunity as just that - a way to fit our own overall file product line. What we already found is that EMC is a technology company, and there may be areas of the market where we play and don't play.

What do you think will be the first step in StorageLink integration? I think it will be information security. I think you're going to see that market hit a fairly significant stable state.

-Lucas Delpier

ANNOUNCEMENTS

Products to be unveiled this week at Storage Networking World:

a datacenter edition, a 10 Gb/sec data security appliance from Data Inc. with 100MB/sec. encryption and compression throughput for Fibre Channel tape systems.

a new SAN, a 10 (1.75-in. high) NAS array from Silver Storage Inc. with a starting price of \$25,500 for 2.8TB of capacity, which scales to 16.8TB for under \$60,000.

a 40 Gbps, a channelized file storage system from InterSystems Inc. with 250MB/sec. using iSeries's 800000 Data I/O array.

a storage SAN, a 100MB/sec. from InterSystems Inc. that can do 1,200 IOPS and offer a 100MB buffer and native external storage.

a 100MB/sec. 100TB SAN, a 100MB/sec. from InterSystems Inc. that offers enhanced SAN management and data protection.



Save time, find better opportunities,
and increase your productivity
from all your systems. All your data, always. HP's *Consolidation Solutions*™
by managing information availability while reducing costs. www.hp.com/go/consolidation

See how *Consolidation Solutions* can help you by downloading
HP's *Consolidation Solutions* white paper. www.hp.com/go/consolidation

© 2005 Hewlett-Packard Development Company, L.P.

Business Objects CEO Explains Move

BY HEATHER HAVENSTEIN
Business Objects SA last month named **John Schwarz** as CEO, replacing company founder

Bernard Liutaud, who continues as chairman of the board and also assumed the new role of chief strategy officer [Quick

Link 56822]. Previously, Schwarz was president of Symantec Corp. He recently spoke to Computerworld

about his goals as CEO of the business intelligence company.

Why did you make the move to Business Objects, a smaller firm than Symantec? I always wanted to be a CEO. Most of the

time, when you get asked to come in and be a CEO ... there is something wrong at that business. You are coming in to restructure, to right the business. This is not the case at Business Objects. It is performing well, there are no outstanding SEC problems, no concerns that would force me to solve past problems.

You and others at Business Objects say you want the company to grow from the \$1 billion revenue mark to become one of the world's 10 largest software companies. How do you plan to do that? We are somewhere in the low 20s now. We have to double the size of the business. There is \$7 billion worth of [potential] revenue in our market. We have 14% to 15% market share. In the broader market [for] analytics and tools, the market doubles to \$14 billion. We will probably continue to acquire and add capacity and customers and products.

Do you plan to move into new markets as well? Yes. Customers are asking us for content that speaks specifically to their kind of business. Up to today, the vast majority of our effort and products have focused on horizontal applications.

Will Business Objects be building these tools? It is not practical for us to do all these applications ourselves. We will be looking to OEMs.

What are the company's plans for Information, the data visualization company you just agreed to acquire? Our business is all about presenting data. Information [has] the best tool we have found that does that. With very easy-to-use, end-user-oriented techniques, you can visualize or picture any amount of information. It allows us to take our complex tools and target them at the end-user community rather than at the IT department. © 5772



your
infrastructure
may protect employees
inside

What protects
employees outside?

View the latest Websense Security Labs webcast:
"Six Degrees of Spyware"
www.websensesecuritylabs.com/webcast

It's no surprise, employees are often unaware of the threats that put the security of their laptops—and your network—at risk every day.

Websense Remote Filtering extends your usage policies to the mobile workforce, keeping you protected from external web threats anytime, anywhere.

Close the security gap.
Download your free evaluation today
www.websense.com/remote

WEBSENSE.
SECURING PRODUCTIVITY.

© 2005 Websense, Inc. All rights reserved. Websense is a registered trademark of Websense, Inc. in the United States and various international markets.

Juniper your Net.



"Okay, Jerry, I'm going to put you down as a 'No' under 'Happy with the network's current performance'."

Put a stop to patchy application performance. Here's how >>

 Juniper

NETWORK EXCELLENCE

Are your remote and branch offices fightin' mad?



As your business grows, so do your headaches. Remote and branch-office users expect the same level of application performance you deliver to headquarters. Anything less and they'll quickly blame you. So it's up to you—and your network—to maintain that peak level of performance everywhere, improving productivity and avoiding user frustration.

Juniper Networks can help. Our application acceleration platforms speed the performance of web-based client-server applications for all users across your business—whether they're in the next cubicle or on another continent. The result is a far more efficient experience for all, using any and every networked application. And by delivering LAN-like performance to branch-office users, telecommuters and road warriors alike, everyone is more productive.

► SECURE AND ASSURED NETWORKING. SUPERIOR AND SPEEDY PERFORMANCE.

Juniper Networks' innovative application acceleration platforms reduce IT costs by enabling data center consolidation and server centralization—letting you cut hardware and application expense while simplifying administration, management and regulatory compliance. You get industry-leading performance and security while reducing network and infrastructure costs on everything from web servers and application licenses to data center hardware and WAN services.



"We tested Juniper Networks WX 50 and WX 20 systems between our headquarters and remote sites and noticed an immediate improvement in application performance across our wide area network. We were delighted to find a solution that could easily plug into our network and operate with minimal setup."

Bill Robertson

► EXPECT MORE FROM YOUR NETWORK. NOW.

Get solutions specifically crafted to accelerate your application—only from Juniper Networks. For your free trial and customized Network Health Report, visit www.juniper.net/trustrial

www.juniper.net

888-JUNIPER (888-586-4737)



© 2005 Juniper Networks

Congratulations Award Recipients!

Computerworld's Enterprise Management World, in conjunction with the Distributed Management Task Force (DMTF), proudly announced the results of the second annual "Best Practices in Enterprise Management" Awards Program. This program recognized case studies highlighting noteworthy solution implementation projects and deployments.



AWARDS PROGRAM EXCLUSIVELY SPONSORED BY:

EMC²
where information lives

Award Recipients in each of the following categories were recognized during an awards ceremony at Enterprise Management World in Bethesda, MD, September 14th:

Distributed Systems and Infrastructure Implementation

- **Fulton County Department of Information Technology** - Atlanta, Georgia
- **Rent-A-Center, Inc.** - Plano, Texas

*Honorable Mentions: Denver Health Hospital and Medical Center - Denver, Colorado
Iron Age Corporation - Westborough, Massachusetts
Oklahoma Heart Hospital - Oklahoma City, Oklahoma*

Security and Risk Management

- **BT** - New York, New York
- **Lehnen Brothers** - New York, New York

*Honorable Mentions: Forsyth County - Winston-Salem, North Carolina
MasterCard International - O'Fallon, Missouri
Media General - Richmond, Virginia*

Industry Regulation, Compliance and Corporate Governance

- **The Guardian Life Insurance Company of America** - New York, New York

*Honorable Mentions: Aspect Communications - San Jose, California
Finisar - Sunnyvale, California*

Managing to Improve TCO/ROI

- **Countrywide Financial Corp.** - Calebasas, California
- **SMART Communications, Inc.** - Makati City, Philippines

*Honorable Mentions: Belgacom - Brussels, Belgium
Calpine Corporation - Houston, Texas
Oakland County - Pontiac, Michigan*

Innovation and Promise

- **City of Austin** - Austin, Texas
- **Northeastern University** - Boston, Massachusetts

*Honorable Mentions: Intel (in partnership with RosettaNet) - Santa Clara, California
Kroll Ontrack Inc. - Eden Prairie, Minnesota
The New York Botanical Garden - Bronx, New York*

DON TENNANT

Leaving a Mark

ONE DAY IN Mrs. Campbell's seventh-grade English class, a pail of soapy water with a sponge was being passed up and down the rows of desks so that we students could clean our cruddy desktops. (Note to younger readers: I mean the tops of our desks. This was 40 years ago.) Mrs. Campbell told us to stop talking during this process and take

out our notebooks (the kind with paper that you write in). As I was taking out my notebook, I turned around to check on the progress of the approaching pail. Mrs. Campbell thought I was talking to the girl behind me, so she told me to come to the front of the class.

I told her that I wasn't talking, but to no avail. She took a piece of chalk and drew a small circle on the blackboard and told me to stick my nose in it. Having been raised to never question authority, I did as I was told. So there I was, slightly bent over because of where Mrs. Campbell had drawn the little circle, with my nose against the blackboard.

Let's just say it left a mark. If there's one thing I haven't tolerated well since that day, it's injustice.

So last week, as I was reading some of the data that yielded the special report on our 2005 Salary Survey in this week's issue, I was bothered by the difference between the average total compensation for male and female IT professionals. For men, the figure is \$89,437; for women, it's \$80,528. Same jobs. But women are paid about 90 cents for every dollar that men are paid.

That there's a gender wage gap is, of course, news to no one. Nor is it news that the gap exists in the IT profession. A reluctance among women to advance their careers by means of relocation (primarily stemming from their partners' career aspirations) has

long been cited as a major reason for the compensation disparity. I agree that's a factor.

But there has to be more to it than that. It's widely held that men work more hours than women do, because of family considerations, but that's not what our survey found. While the survey results show that women value things such as paid time off and a better work/life balance more than men do, the mean number of hours they work is statistically equal. So why the disparity?

Nancy Newkirk, corporate IT director at Boston-based International Data Group, Computerworld's parent company, wonders whether women

negotiate as well as men do and whether women underestimate their worth. "When I'm hiring, I see résumés all the time from men who are really underqualified," she says. "I can tell you honestly, I don't think I see women who submit a résumé for a job they aren't qualified for."

Whatever the reasons, we shouldn't be content with the status quo. True, IT professionals fare better than college graduates in general. According to research conducted earlier this year by the American Association of University Women, college-educated women earn only 72 cents for every dollar earned by their male counterparts.

But how much injustice is acceptable? For 40 years, I've wished I'd picked up the piece of chalk and drawn a big "N" just to the left of that little circle, crossed my arms and looked Mrs. Campbell straight in the eye.

No injustice is acceptable. Let that be the mark left on society by this generation of IT professionals.

© 57664

Don Tennant



THORNTON A. MAY

Exfoliating Dated IT Assumptions

RESEARCHERS at the IT Leadership Academy recently met with several groups, including leading IT practitioners in large and mid-market enterprises; progressive executives in federal, state and local government agencies; hiring managers at vendors; senior executives at IT service firms; deans of major business schools; presidents of community colleges; and strategic planners at staffing firms. The purpose: to ask about assumptions in the organizations that need to be exfoliated.

Here are three of the worst:

Assumption No. 1: Chargebacks are bad. One of the most toxic and widespread assumptions in many otherwise rational IT shops is the belief that installing a chargeback system for the true cost of IT is either too complicated or too fraught with political peril to be undertaken.

The dirty little secret of IT is that every CIO has a chargeback system — that is, he knows what resources go in and what outputs

come out. But is the IT leadership team comfortable with sharing that information with the rest of the enterprise?

Running an IT shop while keeping the rest of the organization in the dark regarding true costs and trade-offs is akin to Stalin micromanaging the Soviet economy. On paper, maybe it's a good idea. In practice, it's a total mess. The ancient Greeks defined idiot as one who is totally self-contained. Technology decision-making can't be contained inside IT. The future belongs to enterprises that understand the costs and trade-offs underpinning their technology decisions.

Assumption No. 2: End users want to remain ignorant about technology. Many IT leaders (particularly baby boomers) believe that business-side executives don't have the time for or interest in



learning about IT. Remember: Ignorance is absence of awareness, not absence of intellect.

We don't need to transform business executives into technology rock stars. But they need to be able to contribute to technology decision-making. This is the true art of next-generation IT leadership—figuring out what the suits need to know and then designing an effective communication strategy to get them to know it. Business-side leaders need to develop good judgment about technology. The trick is figuring out how to let them do this without learning the hard way, through failed projects or missed opportunities.

Assumption No. 2: You don't have to aggressively manage your career. Many of the people I most admire in this industry believe it's enough to be smart, have reasonably well-developed social and communication skills, and be knowledgeable about the business. And this used to be more than enough. But we now live in an age when people are augmenting natural gifts with biochemical and pharmacological tools and using social network/brand building and social science techniques to increase influence and performance. In the future, you are going to have to be better than you! This takes time and thought.

Great organizations—companies like McDonald's under the brilliant stewardship of CEO David Weick—recognize that high performers want to realize their full potential. Such companies, which include Shell, GE and SAS Institute, help their people manage their careers and create training and executive development programs to do just that. **© 57576**

JOHN D. HALAMKA

Health Care's Sore Need for Standards

I'M IN TOKYO lecturing about the need to implement electronic medical records to provide safe, efficient and coordinated medical care. Interestingly, I can walk into any Japanese post office, insert my ATM card (issued by a rural New England bank) into any cash machine and retrieve as many yen as I need. This is made possible by the worldwide adoption of electronic standards for bank-

ing and cash transfers.

However, in my hometown of Boston, my medical records can't be electronically exchanged between two of the world's best teaching hospitals, even though they're across the street from each other. This is because there hasn't been consistent adoption of standards for the storage and exchange of medical information in the U.S. But there's hope.

Health and Human Services Secretary Michael Leavitt has established the American Health Information Community, a group of 17 government, business and nonprofit leaders charged with fostering adoption of interoperable electronic records throughout the country. Further, the HHS-based Office of the National Coordinator for Health Information Technology has funded a \$15.5 million effort to accelerate electronic medical record interoperability. This effort comprises three parts.

The first is to harmonize all the electronic standards for health care in the U.S. There are over 100 U.S. organizations creating standards. These standards are at times redundant, competi-



tive and noninteroperable. To achieve the kind of universal functionality our ATM cards provide worldwide, U.S. parties must agree on a common set of health care data standards implemented consistently by hospitals, clinician offices and nursing homes.

The second step is to standardize privacy and security policies across all 50 states. In Massachusetts, doctors can't retrieve a complete electronic medical list from an insurance company, even with patient consent, if a medication related to mental health, substance abuse or HIV treatment is present. In Ohio, doctors must use a cryptographic electronic signature to prescribe medications electronically. In California, only paper forms are considered a valid patient consent. The laws that created many of these regulations were appropriate 30 years ago, when electronic systems lacked the sophistication available today, but now they're an impediment to delivering safe, patient-focused care.

The third step is to ensure that electronic medical records provide the basic functions needed for a doctor to

record and transmit patient medical information. The average patient over 80 has 10 medications and three clinicians. Rarely is there any coordination of care among caregivers. Objective criteria to certify that an electronic records system meets the basic requirements for data capture and exchange are essential.

These steps are a great start. However, there's a major disconnect in Washington. President Bush has stated that every clinician should be using electronic medical records within 10 years. The U.S. is pursuing this goal with \$100 million. The U.K. has funded a similar effort with \$6 billion. It's estimated that the U.S. could save over \$100 billion yearly by using interoperable electronic medical records, making the return on investment a no-brainer. It's time that we achieve the health care equivalent of the ATM card. If Japan and the U.S. can coordinate complex currency exchanges between Japanese post offices and rural U.S. banks, we should be able to send electronic medical records safely. It's time to make the investment. Your health depends on it. **© 57496**

WANT OUR OPINION?

More columns and links to archives of previous columns are on our Web site www.computerworld.com/columns

READERS' LETTERS

Was HP's Response to Katrina Timely?

DISAGREE with Don Tennant ("Has HP Forgotten?" *QuickLink* 56550). The first reports after Hurricane Katrina hit said New Orleans hadn't suffered serious damage. Only after the levee broke was the city in serious trouble. If HP had canceled its conference in New Orleans the day after the hurricane and there had been no subsequent levee break, the economic damage for the city would have been severe. I wonder what Tennant would have written in that case.

Mariusz Miklas
Product manager,
UCA Software, Vienna,
mariusz@mkilas.at

AGREED how Tennant fit into HP over its wobbling over New Orleans. It's interesting that both HP and federal-state leadership were apparently clueless about the conditions in New Orleans.

G.W. Bush has made it clear that he doesn't watch TV news or read newspapers. Unfortunately for the victims of this tragedy, that behavior apparently was emulated at FEMA and the DHS, where no one was watching, or wanted to admit to watching, the news. That would explain statements like former FEMA chief Michael Brown's "The federal government only received factual confirmation of the disaster on Thursday," implying that live broadcasts from the disaster area weren't watched.

I've convinced the top brass at HP felt the same way about those journalists who "sensationalize for effect." Eventually, that stubborn avoidance of any bad news trickled down to the rest of the leadership team and finally popped up in the internal HP e-mail Tennant quoted, which seemed blithely unaware that New Orleans was destroyed.

Tennant's column did show, though, that HP responded quicker than the federal and state leaders. I'll give them that.

Mark Holt
IT services manager,
Richmond, Va.

Let Virus Writers Shoot It Out

WHAT I READ in the article "Computer Virus Writers at War, Security Firm Sees" (*QuickLink* 56271) makes sense if these are data thieves writing the viruses instead of "joy riders." If you're trying to steal someone's identity or credit card numbers, you don't want someone else using them and setting off alarms just as you make your first attempt. And if you're selling the data, you don't want your customers complaining that they got 70% of the same data from someone else earlier in the day. It's

possible that we may start to see virus writers reporting exploits and virus signatures used by their competitors.

Unfortunately, they'll probably realize that this is the surest a copyright and having each side calling the cops to arrest the others. But we can dream.

David Lettarp
Data architect,
Olympia, Wash.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to James Eschle, letters editor, Computerworld, PO Box 9971, 13000 Street, Framingham, Mass. 01701. Fax (508) 879-4645. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

For more links on these and other topics, go to www.computerworld.com/letters

DON TENNANT

Leaving a Mark

ONE DAY IN Mrs. Campbell's seventh-grade English class, a pail of soapy water with a sponge was being passed up and down the rows of desks so that we students could clean our cruddy desktops. (Note to younger readers: I mean the tops of our desks. This was 40 years ago.) Mrs. Campbell told us to stop talking during this process and take

out our notebooks (the kind with paper that you write in). As I was taking out my notebook, I turned around to check on the progress of the approaching pail. Mrs. Campbell thought I was talking to the girl behind me, so she told me to come to the front of the class.

I told her that I wasn't talking, but to no avail. She took a piece of chalk and drew a small circle on the blackboard and told me to stick my nose in it. Having been raised to never question authority, I did as I was told. So there I was, slightly bent over because of where Mrs. Campbell had drawn the little circle, with my nose against the blackboard.

Let's just say I left a Mark. If there's one thing I haven't tolerated well since that day, it's injustice.

So last week, as I was reading some of the data that yielded the special report on our 2005 Salary Survey in this week's issue, I was bothered by the difference between the average total compensation for male and female IT professionals. For men, the figure is \$89,437; for women, it's \$80,528. Same jobs. But women are paid about 90 cents for every dollar that men are paid.

That there's a gender wage gap is, of course, news to no one. Nor is it news that the gap exists in the IT profession. A reluctance among women to advance their careers by means of relocation (primarily stemming from their partners' career aspirations) has

long been cited as a major reason for the compensation disparity. I agree that's a factor.

But there has to be more to it than that. It's widely held that men work more hours than women do, because of family considerations, but that's not what our survey found. While the survey results show that women value things such

as paid time off and a better work/life balance more than men do, the mean number of hours they work is statistically equal. So why the disparity?

Nancy Newkirk, corporate IT director at Boston-based International Data Group, Computerworld's parent company, wonders whether women

negotiate as well as men do and whether women underestimate their worth. "When I'm hiring, I see résumés all the time from men who are really underqualified," she says. "I can tell you honestly, I don't think I see women who submit a résumé for a job they aren't qualified for."

Whatever the reasons, we shouldn't be content with the status quo. True, IT professionals fare better than college graduates in general. According to research conducted earlier this year by the American Association of University Women, college-educated women earn only 72 cents for every dollar earned by their male counterparts.

But how much injustice is acceptable? For 40 years, I've wished I'd picked up the piece of chalk and drawn a big "N" just to the left of that little circle, crossed my arms and looked Mrs. Campbell straight in the eye.

No injustice is acceptable. Let that be the mark left on society by this generation of IT professionals.

© 57864

Don Tennant



THORNTON A. MAY

Exfoliating Dated IT Assumptions

RESEARCHERS at the IT Leadership Academy recently met with several groups, including leading IT practitioners in large and midsize enterprises; progressive executives in federal, state and local government agencies; hiring managers at vendors; senior executives at IT service firms; deans of major business schools; presidents of community colleges; and strategic planners at staffing firms. The purpose: to ask about assumptions in their organizations that need to be exfoliated.

Here are three of the worst:

Assumption No. 1: Chargebacks are bad.

One of the most toxic and widespread assumptions in many otherwise rational IT shops is the belief that installing a chargeback system for the true cost of IT is either too complicated or too fraught with political peril to be undertaken.

The dirty little secret of IT is that every CIO has a chargeback system — that is, he knows what resources go in and what outputs come out. But is the IT leadership team comfortable with sharing that information with the rest of the enterprise?

Running an IT shop while keeping the rest of the organization in the dark regarding true costs and trade-offs is akin to Stalin micromanaging the Soviet economy. On paper, maybe it's a good idea. In practice, it's a total mess.

The ancient Greeks defined *idiot* as one who is totally self-contained. Technology decision-making can't be contained inside IT. The trade-offs belong to enterprises that understand the costs and trade-offs underpinning their technology decisions.

Assumption No. 2: End users want to remain ignorant about technology. Many IT leaders (particularly baby boomers) believe that business-side executives don't have the time for or interest in



learning about IT. Remember: Ignorance is absence of awareness, not absence of intellect.

We need not to transform business executives into technology rock stars. But they need to be able to contribute to technology decision-making. This is the true art of next-generation IT leadership—figuring out what the suits need to know and then designing an effective communication strategy to get them to know it. Business-savvy leaders need to develop good judgment about technology. The trick is figuring out how to let them do this without learning the hard way, through failed projects or missed opportunities.

Assumption No. 3: You don't have to aggressively manage your career. Many of the people I most admire in this industry believe it's enough to be smart, have reasonably well-developed social and communication skills, and be knowledgeable about the business. And this used to be more than enough. But we now live in an age when people are acquiring natural gifts with biomedical and pharmaceutical tools and using social network/brand building and social science techniques to increase influence and performance. In the future, you are going to have to be better than you! This takes time and thought.

Great organizations—companies like McDonald's under the brilliant stewardship of CEO David Wick—recognize that high performers want to realize their full potential. Such companies, which include Shell, GE and SAS Institute, help their people manage their careers and create training and executive development programs to do just that. **© 575/8**

JOHN D. HALAMKA

Health Care's Sore Need for Standards

IM IN TOKYO lecturing about the need to implement electronic medical records to provide safe, efficient and coordinated medical care. Interestingly, I can walk into any Japanese post office, insert my ATM card (issued by a rural New England bank) into any cash machine and retrieve as many yen as I need. This is made possible by the worldwide adoption of electronic standards for bank-

ing and cash transfers.

However, in my hometown of Boston, my medical records can't be electronically exchanged between two of the world's best teaching hospitals, even though they're across the street from each other. This is because there hasn't been consistent adoption of standards for the storage and exchange of medical information in the U.S. But there's hope.

Health and Human Services Secretary Michael Leavitt has established the American Health Information Community, a group of 17 government, business and nonprofit leaders charged with fostering adoption of interoperable electronic records throughout the country. Further, the HHS-based Office of the National Coordinator for Health Information Technology has funded a \$175 million effort to accelerate electronic medical record interoperability. This effort comprises three parts.

The first is to harmonize all the electronic standards for health care in the U.S. There are over 100 U.S. organizations creating standards. These standards are at times redundant, competi-



John D. Halamka is CEO of CardioSync Health Systems, CEO and senior advisor for electronic health technology at Harvard Medical School, and CEO of the New England Health Care Alliance. He is also a frequent speaker at industry conferences.

tive and noninteroperable.

To achieve the kind of universal functionality our ATM cards provide worldwide, U.S. parties must agree on a common set of health care data standards implemented consistently by hospitals, clinician offices and nursing homes.

The second step is to standardize privacy and security policies across all 50 states. In Massachusetts, doctors can't retrieve a complete electronic medical list from an insurance company, even with patient consent, if a medication related to mental health, substance abuse or HIV treatment is present. In Ohio, doctors must use a cryptographic electronic signature to prescribe medications electronically. In California, only paper forms are considered a valid patient consent. The laws that created many of these regulations were appropriate 30 years ago, when electronic systems lacked the sophistication available today, but now they're an impediment to delivering safe, patient-focused care.

The third step is to ensure that electronic medical records provide the basic functions needed for a doctor to

record and transmit patient medical information. The average patient over 60 has 10 medications and three clinicians. Rarely is there any coordination of care among caregivers. Objective criteria to certify that an electronic records system meets the basic requirements for data capture and exchange are essential.

These steps are a great start. However, there's a major disconnect in Washington. President Bush has stated that every clinician should be using electronic medical records within 10 years. The U.S. is pursuing this goal with \$100 million. The U.K. has funded a similar effort with \$6 billion. It's estimated that the U.S. could save over \$100 billion yearly by using interoperable electronic medical records, making the return on investment a no-brainer.

It's time that we achieve the health care equivalent of the ATM card. If Japan and the U.S. can coordinate complex currency exchanges between Japanese yen and U.S. dollars in U.S. banks, we should be able to send electronic medical records across the street. Now is the time to make the investment. Your health depends on it. **© 574/6**

WANT OUR OPINION?

More columns and links to archives of previous columns are on our Web site: computerworld.com/columns

READERS' LETTERS

Was HP's Response to Katrina Timely?

DISAGREE with Don Tennant ("Has HP Forgotten?" *QuickLink* 56270). The first reports after Hurricane Katrina had said New Orleans hadn't suffered serious damage. Only after the levee broke was the city in serious trouble. If HP had canceled its conference in New Orleans the day after the hurricane and there had been no substantial levee break, the economic damage to the city would have been severe. I wonder what Tennant would have written in that case.

Markus Miklas
Product manager,
UC4 Software, Vienna,
markus@miklas.at

ENJOYED how Tennant hit into HP over the wobbling over New Orleans. It's interesting that both HP and federal/state leadership were apparently clueless about the conditions in New Orleans.

G.W. Bush has made it clear that he doesn't watch TV news or read newspapers. Unfortunately, for the victims of this tragedy, that behavior apparently was rewarded at FEMA and the DHS, where no one was watching, or wanted to admit to watching, the news. That would explain statements like former FEMA chief Michael Brown's "The federal government only received factual confirmation of the disaster on Thursday," implying that live broadcasts from the disaster aren't factual.

I'm convinced the top brass at HP left the same way about those journalists who "sensationalize for effect." Eventually, that stubborn avoidance of any bad news ticked down to the rest of the leadership team and finally popped up in the internal HP e-mail Tennant quoted, which seemed basically unaware that New Orleans was destroyed.

Tennant's column did show, though, that HP responded quicker than the federal and state leaders. I give them that.

Mark Holt
IT services manager,
Richmond, Va.

Let Virus Writers Shoot It Out

WHAT I READ in the article "Computer Virus Writers at War, Security Firm Says" (*QuickLink* 56271) makes sense if these are data thieves writing the viruses instead of "joy riders." If you're trying to steal someone's identity or credit card numbers, you don't want someone else using them and setting off alarms just as you make your first attempt. And if you're selling the data, you don't want your customers complaining that they got 70% of the same data from someone else earlier in the day. It's

possible that we may start to see virus writers reporting exploits and virus signatures used by their companies.

Unfortunately, they'll probably realize that this is less starting a gunfight and having each side call in the cops to arrest the others. But we can dream.

David Lethrop
Data architect,
Olympic, Wash.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to: *James Eckle*, letters editor, *Computerworld*, PO Box 971, 15600 Shattuck, Fremont, Mass. 02170. Fax: (800) 879-4543. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

For more letters on these and other topics go to www.computerworld.com/letters



With Sybase® software, BNSF Railway Company developed a mobile application that enables remote workers to document railway maintenance and:

- ✓ Cuts data entry time by approximately 50 percent
- ✓ Provides more accurate and timely data
- ✓ Delivers software and database updates automatically

For most organizations, maintaining 32,500 miles of rail lines would be a colossal headache. But for BNSF Railway Company, it has become a competitive advantage. Because they have an information edge that comes from Sybase SQL Anywhere® and Adaptive Server® Anywhere software. Now, BNSF remote workers can input data on location (vs. waiting until the end of the day). Headquarters has more visibility into the field. And maintenance decisions are made more proactively. Just a few reasons why more and more global companies are using Sybase every day to keep their business on track. www.sybase.com/infoedge22

Copyright ©2000 Sybase, Inc. All rights reserved. Sybase, the Sybase logo, SQL Anywhere, and Adaptive Server are trademarks of Sybase, Inc.
® indicates registration in the United States of America. All product and company names are trademarks of their respective owners.

SYBASE

HANDS ON REVIEWS Disk Defragmenters Demystified

Disk defragmentation tools offer a trade-off between thoroughness and speed. Russell Key reviews two defragmentation utilities.

Page 29

SECURITY MANAGER'S JOURNAL Bottom-Up Infosec Trumps Top-Down

The higher-ups ask C.J. Kelly for an information security plan on paper, and she finds that her bottom-up approach covers more of the bases than this top-down effort. Page 34



FUTURE WATCH Shrinking Degrees Of Separation

Jon Kleinberg, who has been awarded a MacArthur "genius" grant for his work on computer and social networking, answers some questions about new search technologies. Page 38

WAFS GOES THE DISTANCE

At a Glance

Wide-Area File Services

WHAT ARE THEY? Appliances or software that allow centralization of file services by optimizing connectivity to remote-office clients over a wide-area network. WAFS systems overcome bandwidth and latency limitations through a combination of caching, protocol optimization, compression and other techniques.

PROMISE: Branch-office file servers can be consolidated into the data center, where servers and data can be managed and protected more effectively.

CONCERN: The convergence of WAFS and WAN acceleration technologies and the entry of large players such as Cisco are changing the market rapidly.

Wide-area file services allow centralized consolidation of file services while delivering branch offices responsiveness levels approaching that of local file servers. By Robert L. Mitchell

Anyone who has ever made a call overseas has experienced latency, that pregnant pause that takes place after you've finished speaking and before you hear a response. That short delay of perhaps 300 milliseconds can make long-distance conversations a bit stilted, but it's downright irritating for computer users, who must wait for hundreds — or thousands — of computer-to-computer conversations to be completed before a file can be saved or accessed. That, along with the relatively low bandwidth of WAN links, is why most remote offices still have local file servers.

Now that last bastion of remote-office computing is beginning to fall as companies adopt emerging wide-area file services (WAFS) technologies in a bid to consolidate file services back at the data center.

Computer Sciences Corp. recently took that path as it consolidated IT equipment in 23 branch offices into its headquarters in El Segundo, Calif.

Before CSC turned to WAFS technology, the project was succeeding in all areas — except one. The systems integrator had been able to replace local Microsoft Exchange e-mail servers with Web clients and move services such as the Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS) back into the data center, but the initiative stalled when it came time to consolidate local file servers.

"We discovered that the file services protocol is not tolerant of low-bandwidth, high-latency connections," says Brian Laska, technical architect in

CSC's consulting group. Most offices were limited to 1.44Kbit/sec. T1 speeds, and latency was particularly acute for the most distant offices. "So we scrapped the idea," Laska says.

Then he came across WAFS technology. Start-up Actona Technologies (now owned by Cisco Systems Inc.) offered a set of appli-

cations that optimize file sharing between a centralized site and

Remote office with local file server



Remote office with WAFS



Data center



A WIDE-AREA FILE SERVICES APPLIANCE or server running WAFS software caches data locally and only the portions of cached files that have changed across the WAN. Data that must pass over the wire is compressed, and the file sharing protocol is optimized to reduce overhead. This reduces latency and optimizes throughput, enabling data to be consolidated in the data center, where it can be centrally backed up and administered.



remote offices. The device establishes a local file cache to keep frequently accessed data off the WAN. It also compresses data and optimizes the chunky Common Internet File System (CIFS) file-sharing protocol that CSC's Windows file servers use. Once a file resides in cache, only parts of the file that have changed are transmitted over the WAN.

After a period of testing, Laska rolled out the products in its data center and 19 branch offices last April. The change was transparent to end users, who were redirected to the new devices by way of a log-in script change. "We took 29 servers and cut them

down to two," Laska says. While the cost of the appliances versus buying new file servers "is a wash," he expects the system to pay for itself in two years. "We don't have to back up [local file servers], maintain them or get support contracts for them. It's just routers and switches left," he says, adding that eliminating branch-office backups cut on-site tape-vaulting costs by 83%.

From Niche to Mainstream

WAFS technology began to appear over the past two to three years, initially gaining a foothold in financial services, engineering and legal markets.

"What you have is a whole range of early adopters who have some profound business issue that rationalizes this kind of technology," says Brad O'Neill, an analyst at Taneja Group Inc. in Hopkinton, Mass. These users often had a critical need for fast, shared access to files such as legal or engineering documents to collaborate with employees in distant offices.

Now adoption of WAFS technology is broadening. The market, measured in tens of millions of dollars today, doubled in the past 12 months and will grow 150% to 200% in the next year, according to Taneja Group. Consolidation and regulatory compliance needs are driving that growth.

CSC and other organizations now view the technology as a way to simplify the IT infrastructure by moving servers and data back into the data center, where IT can more easily administer them and back up and protect the data. That's particularly important for businesses that must comply with regulations such as the Sarbanes-Oxley Act, says O'Neill. With branch-office data centralized, all corporate data can be more quickly and reliably presented in response to an audit.

At CW Capital Investments LLC, collaboration issues drove the adoption of WAFS. Files such as loan applications needed to be shared among officers during processing. "We do securitized loans with larger banks. To wait even a few minutes for a file can be a problem," says Vern Butler, chief technology officer at the Needham, Mass.-based lending institution. But with average file sizes of 10MB to 20MB, opening or saving a file over the WAN was taking up to 10 minutes. "There was an outcry from the offices to get faster response times," Butler says.

Using e-mail to route files was too slow and affected workflow because multiple users needed to interact with the same files and have quick access to them. "If I have to wait for an underwriter to go through the entire process before I can make a few small changes, that takes a week or two," Butler says. Software from Avallit Inc. and other business process improvements helped shorten loan turnaround times from a month to one week or less.

Avallit's product takes a different approach from conventional WAFS devices: Instead of using a cache, Avallit's software, which runs on a Windows server, fully replicates more than 125GB of data between locations. It keeps the copies synchronized by updating only the portion of each file that has changed when files are saved.

Bidirectional replication was important, says Butler, because users needed access to files even if WAN connectivity failed. The system creates real-time backups that are always up to date, and CW Capital uses the system to maintain backups at a fail-

"We took 29 servers and cut them down to two [by using WAFS appliances]."

BRIAN LASKA, technical architect, CSC's consulting group

over site maintained by SunGard Data Systems Inc. As with many other WAFS devices, however, file locking is coordinated from the central site. If WAN connectivity goes down and two remote offices change the same file locally, the version inconsistencies must be resolved manually on the back end.

Converging Technologies

WAFS products have focused on application-specific optimizations such as CIFS acceleration, but as the devices have gained in popularity, they've begun to merge with lower-level WAN-optimization technologies. The converged offerings, dubbed wide-area data services, provide a top-to-bottom approach to optimizing remote-office access. Garner Inc., which refers to the category as WAN optimization controllers, expects spending to grow nearly 70% to \$1.19 billion next year (see chart at left).

Cisco jump-started the convergence process when it acquired Acronis last year and integrated the vendor's product into its converged Wide Area Application Engine architecture. DiskStix Inc. is now cross-selling a WAFS product alongside Expand Networks Inc.'s WAN optimization offering. Riverbed Technology Inc. offers its own converged product. Instead of caching or replicating files, it chops up TCP traffic into 100-byte segments that it labels and stores in a local cache. When a file request is made, it intercepts the response and returns only the segments of data that aren't in cache. By using this approach, the company says it can accelerate any application, not just file services.

That approach made sense to Walter Curd, director of IT at Marvel Semiconductor Inc. in Sunnyvale, Calif. Eighty percent of the \$1.5 billion semiconductor designer's employees are engineers, and many need to share large files. With 12 offices scattered across the globe, latency was a big problem.

Curd considered a WAFS product from Citic Networks Inc. but says he wanted something that would also accelerate access to other applications, such as e-mail and an intranet site. (Citic does offer a product for Exchange that optimizes transfers of file attachments.)

In several new branch offices Marvel has opened, the company has avoided installation of local servers. "Now we don't have to put in an e-mail server in every location," Curd says. As for remote access to file shares, "It's not quite as fast as being here, but the response is quite nice," he says. Backups are also now handled centrally.

Curd says Marvel was careful to configure the appliances to exclude voice-over IP and videoconferencing traffic. "Otherwise it will compress all of the data," which would affect quality of service, he says.

Most of the system's benefits are hard to quantify. "There wasn't a huge ROI," Curd says, except in a

Continued on page 25

Optimization on the Fast Track

Further predicts that end-user spending on WAN optimization equipment, a broader category that includes WAFS and WAN optimization products, will surpass \$1 billion by 2006:



SOURCE: GARTNER DATACUBE Q1, MAY 2000

Know Your WAFS From Your WADS


Wide-area file services are part of a broader category called wide-area data services. Here's what each entails.

WAFS

WIDE-AREA FILE SERVICES attempt to provide access to files over a WAN as quickly as if they were stored locally. To do this, WAFS products must reduce latency and optimize the use of limited bandwidth. Products typically use a combination of local caching, data compression and optimization of higher-level protocols such as CIFS to minimize the number of message exchanges required to open or save a file.

WIDE-AREA DATA SERVICES describe characteristics of WAFS and WAN optimization technology to solve the problem of providing remote access to a wide variety of data. Unlike WAFS, it removes any "wide" feature access to this category of WAN optimization controllers (see chart above).

Award-winning products have
a way of transforming the office.



All the productivity you want.
All the document security you need.



sharpusa.com/documents

SHARP.

EMC²

For information call



Continued from page 22
few new offices where he avoided buying new servers. Productivity gains were equally elusive to measure. "How do you quantify faster file transfers for 25 people?" he asks.

Transitional State

Although WAFS devices have been around for a few years, the technology is still relatively new and is evolving rapidly. "Vendors are constantly updating what they have," says Simon Robinson, an analyst at The 451 Group in New York. Although smaller vendors still dominate the market, that's changing as products converge with WAN optimization technologies and networking vendors consider adding the capabilities to their switching products. Acquisitions and alliances are quickly changing the market, which adds an element of uncertainty for buyers.

CSC's WAFS deployment had to be delayed while Cisco completed its acquisition of Actona. "They had to go through their whole branding," Lanka says, which left CSC in the lurch. "The whole timing of the merger, that really strained [the relationship]."

The systems also aren't cheaper than using file servers. Prices start at \$10,000 to equip the data center, plus \$5,000 per branch, and a typical installation

can go much higher. But for organizations with many branch offices, where the frustration of supporting file servers and data from afar is compounded, the

price of admission will seem small indeed if it means ditching remote file servers once and for all. **© 50004**

How WAFS Vendors Cache In

WAFS vendors have come up with different approaches to providing remote access to the services. Not all use caching, for example. Here's how a few compare.

Small Networks (in South Plainfield, N.J.) offers a caching hardware appliance that uses a distributed file system. "Without [a DFS], you can't ensure 100% integrity for data," says President Chuck Foley. SmallNetwork's software is similar, but it includes embedded Linux and runs on the user's hardware. The Potomac, Md.-based vendor says its software will run as a Windows virtual server in the data center and can support print, DNS and DHCP services. Class Systems acquired WAFS vendor Actona last year and now offers a converged line of products called Wide Area Application Engines that have WAFS File Engine Content Engine modules.

Revised Technology offers WAFS-like capabilities but stores up and caches segments of data embedded in TCP buffers instead of caching individual files. When a file is requested,

it intercepts the data as the server returns and transfers only the data that doesn't exist in the local appliance.

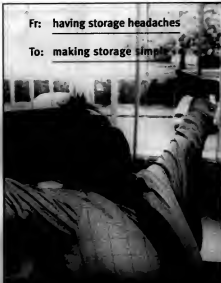
Revised doesn't like to call it a cache. "It's a data-based, double-ended TCP proxy product," says Alan Selditch, vice president of product marketing. Revised's technique allows the appliance to service any remote-office applications, not just file services. But the in-file appliance also must intercept all TCP traffic, rather than just those for the requests.

Amali in Andover, Mass., offers software that does full bidirectional replication rather than using a cache. The application runs on a Windows server. The vendor argues that this method provides continuously updated backup between sites and allows full access to all data, even when a WAN connection goes down. "We move data at the best possible time - when you want it. The worst time to move it is when you want it," says Craig Rensfeldt, vice president of operations at Amali.

-Robert L. Mitchell

Fr: having storage headaches

To: making storage simple



EMC
where information lives

Whether you need fast backup and complete protection or scalable and easy-to-manage storage consolidation for your midsize enterprise, EMC brings you solutions that are high on results—and simple to use. That's because it's easier than ever to put award-winning software, robust storage, and world-class technical support to work solving your business's critical IT challenges.



EMC CLARION®
iSCSI SOLUTION

Buy for **\$20,640**
Lease for **\$651**

- EMC CLARION® CX300i IP Storage Platform
- 365GB storage capacity (as priced), scalable up to 19TB
- EMC Navisphere® Workgroup license



EMC CLARION®
Backup SOLUTION

Buy for **\$22,253**
Lease for **\$702**

- EMC CLARION® CX300 Storage Platform
- 365GB storage capacity (as priced), scalable up to 19TB
- EMC Navisphere® Workgroup license
- EMC Dantz® Retrospect® Multiserver Backup software



EMC CLARION®
SAN SOLUTION

Buy for **\$24,535**
Lease for **\$774**

- EMC CLARION® CX300 Storage Platform
- 365GB storage capacity (as priced), scalable up to 19TB
- EMC Navisphere® Workgroup license
- 8-port switch

LOW STORAGE RELIEF COMES
AFFORDABLE, SCALABLE PACKAGES

EMC'S CUSTOMIZABLE
iSCSI STORAGE INTERFACES

CALL NOW 1-866-796-6369 or visit www.EMC.com/offers.

*Monthly lease amount is based on 36-month flat monthly "lease" rates, less payments in advance. This offer is valid until December 31, 2001 and is subject to credit approval and final lease documentation. This proposal is based on assumptions regarding the equipment configuration and use and is subject to change if the configuration, software, services, warranty terms, or other price changes. Pricing, specifications, availability, and terms of offer may change without notice. EMC, CLARION, iSCSI, Navisphere, Retrospect, and other trademarks are the registered trademarks of EMC Corporation. All other trademarks and trade names are the property of their respective owners. © Copyright 2001 EMC Corporation. All rights reserved. Reproduced in this file 10/01

Continued from page 22
few new offices where be avoided buying new servers. Productivity gains were equally elusive to measure. "How do you quantify faster file transfers for 25 people?" he asks.

Transitional State

Although WAFS devices have been around for a few years, the technology is still relatively new and is evolving rapidly. "Vendors are constantly updating what they have," says Simon Robinson, an analyst at The 451 Group in New York. Although smaller vendors still dominate the market, that's changing as products converge with WAN optimization technologies and networking vendors consider adding the capabilities to their switching products. Acquisitions and alliances are quickly changing the market, which adds an element of uncertainty for buyers.

CSG's WAFS deployment had to be delayed while Cisco completed its acquisition of Actona. "They had to go through their whole branding," Laska says, which left CSC in the lurch. "The whole timing of the merger, that really strained [the relationship]."

The systems also aren't cheaper than using file servers. Prices start at \$10,000 to equip the data center, plus \$5,000 per branch, and a typical installation

can go much higher. But for organizations with many branch offices, where the frustration of supporting file servers and data from afar is compounded, the

price of admission will seem small indeed if it means ditching remote file servers once and for all. **Q 56664**

How WAFS Vendors Cache In

WAFS vendors have come up with different approaches to providing remote access to file services. Not all use caching, for example. Here's how a few compare.

Tacit Networks in South Plainfield, N.J., offers a caching hardware appliance that uses a distributed file system. "Without [a DFS], you can't ensure 100% integrity for data," says President Chuck Foley. **DiskSitter** software is similar, but it includes embedded Linux and runs on the user's hardware. The Patuxet, Md.-based vendor says its software will run as a VMware virtual server in the data center and can support print, DNS and DHCP services. **Cisco Systems** acquired WAFS vendor Actona last year and now offers a converged line of products called Wide Area Application Engines that have WAFS File Engine Content Engine modules.

Reverb Technology offers WAFS-like capabilities but stores up and caches copies of data embedded in TCP traffic instead of caching individual files. When a file is requested,

it intercepts the data the file server returns and transfers only the data that doesn't exist in the local appliance.

Reverb doesn't like to call it a cache. "It's a disk-based, double-ended TCP proxy product," says Alan Salidich, vice president of product marketing. Reverb's technique allows the appliance to service any remote-office applications, not just file services. But the in-line appliance also must intercept all TCP traffic rather than just those for file requests.

Availit in Andover, Mass., offers software that does full bidirectional replication rather than using a cache. The application runs on a Windows server. The vendor argues that this method provides continuously updated backup between sites and allows full access to all data, even when a WAN connection goes down. "We move data at the best possible time—when you save it. The worst time to move it is when you want it," says Craig Randall, vice president of operations at Availit.

—Robert L. Mitchell

Fr: having storage headaches

To: making storage simple



NOW STORAGE RELIEF COMES IN AFFORDABLE, SCALABLE PACKAGES

Whether you need fast backup and complete protection or scalable and easy-to-manage storage consolidation for your midsize enterprise, EMC brings you solutions that are high on results—and simple to use. That's because it's easier than ever to put award-winning software, robust storage, and world-class technical support to work solving your business's critical IT challenges.

EMC CLARiiON ISCSI SOLUTION	EMC CLARiiON BACKUP SOLUTION	EMC CLARiiON SAN SOLUTION
		
Buy for \$20,640 \$651 <small>Lease*</small>	Buy for \$22,253 \$702 <small>Lease*</small>	Buy for \$24,525 \$774 <small>Lease*</small>
<ul style="list-style-type: none"> • EMC® CLARiiON® CX300i IP Storage Platform • 365GB storage capacity (as priced), scalable up to 19TB • EMC Navisphere® Workgroup license 	<ul style="list-style-type: none"> • EMC® CLARiiON® CX300 Storage Platform • 365GB storage capacity (as priced), scalable up to 19TB • EMC Navisphere® Workgroup license • EMC DataT* Retrospect® Multiserver Backup software 	<ul style="list-style-type: none"> • EMC® CLARiiON® CX300 Storage Platform • 365GB storage capacity (as priced), scalable up to 19TB • EMC Navisphere® Workgroup license • e-port switch

BUSINESS SOLUTIONS FOR MIDSIZE ENTERPRISES

CALL NOW

1-866-796-6369 or visit www.EMC.com/offers.

*Monthly lease amounts are based on 36-month Pay Market Value lease, 50% payments in advance. This offer is valid until December 31, 2005 and is subject to credit approval and final lease documentation. This program is based on assumptions regarding the equipment configuration and sale and is subject to change if the configuration, software, services, warranty, or sale price changes. Price, specifications, availability, and terms of offer may change without notice.

EMC, EMC CLARiiON, EMC Navisphere, Retrospect, and other information from are registered trademarks of EMC Corporation. All other trademarks and trade names are the property of their respective owners. © Copyright 2005 EMC Corporation. All rights reserved. Published in the USA 05-015

Will your next tech choice crest or sink?

Geek's Garden

Computerized PAIN Lenses removed that stretching stretches patients while positive interaction and comfort in the treatment. Here, a study by Stanford University researchers published in the October issue of *Psychological Science* reveals that we find being stretched by artificial intelligence just as persuasive and useful as being stretched by humans.

Participants already believed in an experiment designed to test that artificial intelligence is the "better" treatment because of repeated measurements of

stretching. The researchers found, just one of the participants' best comments and related statements according to an algorithm based on human thinking and exhibited by movements driven by the amplitude of the recorded movements. Along with demonstrating that being stretched by a computer is as persuasive as being stretched by a person, the researchers note a glimpse of what technology has in store.



computer work

"People who enhance a digital representation of themselves in the outside world - by posting a digital photograph, by taking a cell-phone recording of their voice... in having a snapshot of their identity that can be easily accessed by people with both

good and bad intentions," Buchanan wrote. Buchanan is an assistant professor in the Department of Communications at Stanford.

While some of the research in the Department of Communications at Stanford is currently under review, the researchers are currently under review.

Taking the Pain Online



Participants who used the online stretching program reported a 65% reduction in pain, compared to a 45% reduction in pain for the control group.

Thanks for the Memor



ANALOG PHONE SYSTEM?

HOW RETRO.

Now is the time to upgrade to VoIP handsets and conference phones from Polycom. Our award-winning VoIP solutions make the transition to the world of IP easier than ever. To learn more about the phones of the future, visit polycom.com/experience

POLYCOM

TOGETHER, GREAT THINGS HAPPEN.™

Geek's

A STROLL THROUGH THE TECHNOLOGY LANDSCAPE

Taking the Pain Online



Over half of U.S. households connected to the Internet will pay their bills online by 2010, according to Forrester Research Inc. The firm predicts that 52% of the estimated 90.7 million households projected to be on the Web in five years will have given up on checks, envelopes and stamps for bill-paying. Those numbers translate into a 75% increase over the number of households that currently pay bills online.

SOURCE: FORRESTER RESEARCH INC. (CAMBRIDGE, MASS.)

DIFFERENCE ENGINES

Thanks for
The Memory

IN 1951



Virtual Mirror On the Wall

RESEARCHERS HAVE LONG KNOWN that mimicking another person elicits positive interactions and emotions in the mimicked. Now, a study by Stanford University researchers published in the October issue of *Psychological Science* indicates that we find being mimicked

by artificial intelligence as persuasive and likable as being mimicked by humans.

Participants in the study listened to an argument given by an artificial agent that either mimicked the listeners' head movements or replicated the movements of another participant. Listeners who were mimicked viewed agents as more likable than did those who listened to agents that didn't mimic them.

"In addition, participants interacting with mimicking agents on average didn't turn their heads such that the agent was outside of their view," wrote professor Jeremy N. Bailenson and Stanford doctoral candidate Nick Yee. The researchers also found that although participants knew a nonhuman agent was speaking to them, most didn't notice the mimicry.

The artificial agents consisted of a head and

shoulders and came in both male and female versions. They mimicked the pitch, yaw and roll of the participants' head movements and blinked randomly (according to an algorithm based on human blinking) and exhibited lip movements driven by the amplitude of the recorded message. Along with discovering that being mimicked by a computer is as persuasive as being mimicked by a person, the researchers saw a glimpse of what technology has in store.



JEREMY N. BAILENSON AS A computer avatar

"Anyone who releases a digital representation of themselves to the outside world - by posting a digital photograph, by leaving a cell phone recording of their voice - is leaving a footprint of their identity that can be subtly absorbed by people with both

good and bad intentions," Bailenson wrote. Bailenson is an assistant professor in the Department of Communications at Stanford. His main area of interest is the phenomenon of digital human representation, especially in the context of immersive virtual reality. He explores the manner in which people are able to represent themselves when the physical constraints of the human body and realistically rendered behaviors are removed. **EW 57295**

Page compiled by Tommy Peterson



Now is the time to upgrade to VoIP handsets and conference phones from Polycom. Our award-winning VoIP solutions make the transition to the world of IP easier than ever. To learn more about the phones of the future, visit polycom.com/experience

POLYCOM

TOGETHER GREAT THINGS HAPPEN

VIDEO VOICE DATA WEB

The shortest route to long-term solutions.

As a Forrester Executive Council member, you'll benefit from interacting with a unique group of peers who provide a sounding board for your critical decision making. You'll have access to your own Forrester advisory team that leverages the expertise of more than 200 Forrester research professionals. Together, this collective will advance your personal and corporate knowledge, support and validate your initiatives and decisions, and help you find the right solutions faster.

Security & Risk Management Council

This Council helps members distinguish between taking technical measures and implementing major network architecture enhancements to manage genuine risk, cut costs, and improve service.

Enterprise Architecture Council

Join this Council, and you'll learn how to craft effective architecture governance processes to make autonomous units act in concert and develop a framework for delivering balanced IT services.

Forrester's Executive Councils are the shortest route to long-term solutions. Join today to learn how to craft effective architecture governance processes to make autonomous units act in concert and develop a framework for delivering balanced IT services.

forrester.com/ovalinfo

Disk Defragmenters

Demystified

HANDS ON
REVIEWS

By Russell Kay

These disk defragmentation tools present a trade-off between thoroughness and time required to run the programs. Both approaches can be effective.

MOST PEOPLE THINK of disk defragmentation as a process that involves gathering and reordering pieces of data files that have been scattered on a hard drive. The fragments are moved around, like the pieces in a shell game, so that each file occupies a unified, contiguous chunk of real estate on the hard drive. The process, a little like putting together a jigsaw puzzle, speeds up disk performance by allowing the drive's heads to read an entire file without having to jump back to the drive index for more lookups.

That process is called physical defragmentation. However, no disk utility on the market does that. In-

stead, the tools reviewed here—PerfectDisk 7, Diskkeeper 9 and the Disk Defragmenter utility included with Windows XP—all defragment logical hard drives (or volumes) created by the operating system's file system.

These utilities perform a similar operation at the volume level. They also improve performance by positioning files at specific locations within the directory in order to speed up tasks such as booting and directory access. But it's only after the defragmentation utility has completed a pass on the logical volume that the disk drive subsystem (whether Fibre Channel, SCSI, ATA or Serial ATA) uses that information to organize data stored on the physical disk platters.

The problem of disk defragmentation has been muted somewhat by the evolution of the Windows file system. Both the desktop and server versions of Windows use NT File System. Because NTFS volumes are indexed by a master file table distributed across the drive, they derive less benefit from defragmentation than NTFS's predecessor, FAT-32. However, defragmenters still improve performance, especially for machines that multitask.

Also, while both PCs and servers with direct-attached storage can bene-

fit from defragmentation, the process is less useful for storage arrays, which split data over multiple disks and use different principles for organizing data storage (see the QuickStudy on RAID, QuickLink #7330).

Difference of Opinion

Raxco Software Inc. in Gaithersburg, Md., and Diskkeeper Corp. in Burbank, Calif., have very different views of storage optimization. Diskkeeper, the 800-pound gorilla in the market, adver-

Continued on page 31

At a Glance

Diskkeeper's full-screen graphical map of disk usage (left) was easier to read than that of PerfectDisk (right). However, PerfectDisk generated more detailed reports.



Diskkeeper Corp., Burbank, Calif.

www.diskkeeper.com/diskrag.asp

Price: Professional Edition is \$49.95;
Server Standard Edition starts at \$349.95;
Server Enterprise Edition starts at \$999.

Raxco Software Inc.,

Gaithersburg, Md.

www.raxco.com

Price: PerfectDisk Workstation is \$39.95;
PerfectDisk Server costs \$299.95.

WHAT EVERY
**MONOLITHIC
CORPORATE
CONGLOMERATE**
NEEDS MORE OF
SPONTANEITY.

The real world operates in real time — so should your conference technology. For fast, easy, and intuitive collaboration, look to Polycom for solutions. To learn more about our real-time offerings, immediately visit polycom.com/experience

POLYCOM

VIDEO VOICE DATA WEB TOGETHER, GREAT THINGS HAPPEN™

Disk Defragmenters

HANDS ON
REVIEWS

By Russell Kay

Demystified

These disk defragmentation tools present a trade-off between thoroughness and time required to run the programs. Both approaches can be effective.

MOST PEOPLE THINK of disk defragmentation as a process that involves gathering and reordering pieces of data files that have been scattered on a hard drive. The fragments are moved around, like the pieces in a shell game, so that each file occupies a unified, contiguous chunk of real estate on the hard drive. The process, a little like putting together a jigsaw puzzle, speeds up disk performance by allowing the drive's heads to read an entire file without having to jump back to the drive index for more lookups. That process is called physical defragmentation. However, no disk utility on the market does that. In-

stead, the tools reviewed here — PerfectDisk 7, Diskeeper 9 and the Disk Defragmenter utility included with Windows XP — all defragment logical hard drives (or volumes) created by the operating system's file system.

These utilities perform a similar operation at the volume level. They also improve performance by positioning files at specific locations within the directory in order to speed up tasks such as booting and directory access. But it's only after the defragmentation utility has completed a pass on the logical volume that the disk drive subsystem (whether Fibre Channel, iSCSI, ATA or Serial ATA) uses that information to organize data stored on the physical disk platters.

The problem of disk defragmentation has been muted somewhat by the evolution of the Windows file system. Both the desktop and server versions of Windows use NT File System. Because NTFS volumes are indexed by a master file table distributed across the drive, they derive less benefit from defragmentation than NTFS's predecessor, FAT-32. However, defragmenters still improve performance, especially for machines that multitask.

Also, while both PCs and servers with direct-attached storage can bene-

fit from defragmentation, the process is less useful for storage arrays, which split data over multiple disks and use different principles for organizing data storage (see the QuickStudy on RAID, QuickLink 27380).

Difference of Opinion

Raxco Software Inc. in Gaithersburg, Md., and Diskeeper Corp. in Burbank, Calif., have very different views of storage optimization. Diskeeper, the 800-pound gorilla in the market, adver-

Continued on page 31

At a Glance

Diskeeper's full-screen graphical map of disk usage (left) was easier to read than that of PerfectDisk (right). However, PerfectDisk generated more detailed reports.



Diskeeper 9

Diskeeper Corp., Burbank, Calif.

www.diskeeper.com/defrag.asp

Price: Professional Edition is \$49.95;
Server Standard Edition starts at \$249.95;
Server Enterprise Edition starts at \$999.



PerfectDisk 7

Raxco Software Inc., Gaithersburg, Md.

www.raxco.com

Price: PerfectDisk Workstation is \$39.95;
PerfectDisk Server costs \$239.95.

WHAT EVERY
**MONOLITHIC
CORPORATE
CONGLOMERATE**
NEEDS MORE OF:

SPONTANEITY.

The real world operates in real time — so should your conference technology. For fast, easy and intuitive collaboration, look to Polycom for solutions. To learn more about our real time offerings, immediately visit polycom.com/experience



POLYCOM

VOICE VIDEO DATA WEB TOGETHER, GREAT THINGS HAPPEN.

Join a risk-reduction program.

As a member of a Forrester Executive Council, you'll have your own personal advisory team to help you make the right IT and business decisions. They'll leverage the expertise of more than 200 Forrester research professionals to increase your corporate knowledge, support and validate your IT initiatives and decisions, and reduce your risk. You'll also benefit from interacting with a unique group of peers.

Application Development Council

At this Council, we'll show you how to re-evaluate design and development processes, tools, architecture, and platforms to ensure agile and effective applications.

IT Operations Management Council

This Council focuses on operations management best practices, systems management tools, workload and applications management, and much more.

Forrester Executive Council members have access to our more than 20 years of industry-specific research expertise. To become a member of an exclusive club that will keep you abreast of major trends, technology shifts, and best practices, email Mike Kasparian: mkasparian@forrester.com. Or visit us online.

FORRESTER

Helping Business Leaders Navigate Technology Change

forrester.com/ovalinfo

Continued from page 29
ties ease of use and the simplicity of remote, network-based administration. It advocates automated, daily defragmentation as standard maintenance.

Raxco claims that its PerfectDisk does a more thorough job in a single pass, can operate on disks with less free space and offers powerful analysis tools. Indeed, our tests show that Diskkeeper does run faster, making daily use less cumbersome, while PerfectDisk is more thorough.

Raxco also touts PerfectDisk's ability to defragment all free space as well as areas containing data. Free space on a disk gets fragmented over time, just as space containing data does. However, defragmenting free space takes extra time. Microsoft Corp.'s Windows Disk Defragmenter focuses only on areas with data.

Diskkeeper deliberately chooses to save processing time by not defragmenting free space. PerfectDisk tackles both but takes significantly more time as it utilizes free space and consolidates files. Defragmentation time isn't the only trade-off, however. If you defragment only data on a disk that's nearing capacity and then save a file that's bigger than any available chunk of contiguous free space, the operating system will have to fragment the new file right from the get-go.

But Diskkeeper product manager Michael Materic claims that splitting files into two to three fragments is not a problem in most cases. "Putting all the free space into a single chunk is only useful for some purposes — for very large files," he says.

According to Raxco CEO Bob Nolan, if you're talking about a workstation with a small hard drive that's half empty and all you're concerned about is data, then any product will defragment it. The differences between the products start emerging "as the disk starts to fill up, as severity of fragmentation increases, and as remaining free space gets increasingly fragmented," he says.

Still, Raxco's approach takes longer, and the incremental value of complete defragmentation is questionable, according to Diskkeeper. It opts for a fast but good enough pass to save time. Because of the dynamic nature of storage, the drive is constantly writing and deleting files, and free space is contin-

ually changing.

Materic contends that with Diskkeeper's free-space engine, "we'll do a comparable job to Raxco, but we'll do it over a period of time rather than all at once."

Head to Head

In our tests, PerfectDisk and Diskkeeper turned in performances in keeping with their developers' stated approaches to defragmenting. PerfectDisk took about 10 minutes to defragment 3.5GB of data residing in 23,423 files on a 5GB partition, versus just under 3 minutes, 30 seconds for Diskkeeper (see table). But Diskkeeper left the partition with more excess fragments and files still broken up.

Windows XP's Disk Defragmenter took slightly longer than Diskkeeper, at 3 minutes, 56 seconds, and it left more excess fragments but, oddly, fewer fragmented files. Also, the Windows utility left more fragments in the most fragmented file on disk.

In keeping with Diskkeeper's philosophy of producing better defragmenting over time, we reran its product a second time on the same partition. This time the program completed quickly, in just 1 minute, 23 seconds. A second pass produced marginally better results, cutting the total number of excess fragments to 1,281. A third pass dropped that to 991.

The three products also provided very different reports, both before and after defragmentation. Disk Defragmenter's was the most sparse, with only a small text file for statistics. Its graphical display was similar to that of Diskkeeper but was confined to a single line. PerfectDisk provided an extensive, nicely formatted report that was easy to save and use, but its graphical display was more difficult to read. It indicated the difference between fragmented and nonfragmented files with only a tiny white border around each graphical data block, with no other color differentiation except for type of file use.

Diskkeeper's graphical report was the easiest to read, with fragmented areas in red and unfragmented ones in blue. But it provided little in the way of statistics and generally presented these in a pop-up window that didn't even have a button on it for saving the message.

PerfectDisk didn't complain about our nearly full test disk, but Diskkeeper notified us during each test run that the drive was too full (it wanted to see 20% free space), and the program warned that this was a bigger problem than fragmentation.

While PerfectDisk comes out ahead on the strength of its defragmenting abilities and statistics-filled reports, Diskkeeper runs much faster and provides reports that are easier to read. The defragmenting utility that comes with Windows is adequate but not nearly as effective as the other two products.

If the length of time required to defragment is critical, then Diskkeeper is the obvious choice. For extreme situations and much more complete defrag-

mentation, PerfectDisk is the clear winner. The Windows XP utility is, of course, free and better than nothing. Before making a choice, however, administrators should do their own testing using files and disk capacities that closely mirror their specific environments. **© 57550**

Kay is a Computerworld contributing writer in Worcester, Mass. Contact him at ruskay@charter.net.

Disk Defragmenter Test Results

Fragmented disk	PerfectDisk 7	Diskkeeper 8	Windows XP
Not available	12:05	8:30/1:54	3:55
2,948	718,748	10,945/1248	8,948
1,040	1	12/110	101
5,988	1	1,782/2,281	1903
1,248	0.348	58,845/59,948	59,948
298	2	144/132	154
1,04	1	1,08/1,05	1,08

GOOD HAIR DAY? GO VIDEO.
BAD HAIR DAY? GO VOICE.

Whether you need voice, video, or even data conferencing, Polycom has a solution for your business. So you can look like a hero, even if your hair is a wreck. To learn more about looking and sounding great, visit polycom.com/experience

POLYCOM

VOIP • VIDEO • DATA • WEB

METHOD AND BENEFITS

Go online to find out how Computerworld put the defragmenters through their paces. QuickLink.575502

Defragmenting makes sense in some situations — but not all. QuickLink.575500
www.computerworld.com

Continued from page 29

tises ease of use and the simplicity of remote, network-based administration. It advocates automated, daily defragmentation as standard maintenance.

Raxco claims that its PerfectDisk does a more thorough job in a single pass, can operate on disks with less free space and offers powerful analysis tools. Indeed, our tests show that Diskkeeper does run faster, making daily use less cumbersome while PerfectDisk is more thorough.

Raxco also touts PerfectDisk's ability to defragment all free space as well as areas containing data. Free space on a disk gets fragmented over time, just as space containing data does. However, defragmenting free space takes extra time. Microsoft Corp.'s Windows Disk Defragmenter focuses only on areas with data.

Diskkeeper deliberately chooses to save processing time by not defragmenting free space. PerfectDisk tackles both but takes significantly more time as it unifies free space and consolidates files. Defragmentation time isn't the only trade-off, however. If you defragment only data on a disk that's nearing capacity and then save a file that's bigger than any available chunk of contiguous free space, the operating system will have to fragment the new file right from the get-go.

But Diskkeeper product manager Michael Materie claims that splitting files into two to three fragments is not a problem in most cases. "Putting all the free space into a single chunk is only useful for some purposes — for very large files," he says.

According to Raxco CEO Bob Nolan, if you're talking about a workstation with a small hard drive that's half empty and all you're concerned about is data, then any product will defragment it. The differences between the products start emerging "as the disk starts to fill up, as severity of fragmentation increases, and as remaining free space gets increasingly fragmented," he says.

Still, Raxco's approach takes longer, and the incremental value of complete defragmentation is questionable, according to Diskkeeper. It opts for a fast but good-enough pass to save time. Because of the dynamic nature of storage, the drive is constantly writing and deleting files, and free space is contin-

ually changing.

Materie contends that with Diskkeeper's free-space engine, "we'll do a comparable job to Raxco, but we'll do it over a period of time rather than all at once."

Head to Head

In our tests, PerfectDisk and Diskkeeper turned in performances in keeping with their developers' stated approach to defragmenting. PerfectDisk took about 10 minutes to defragment 3.5GB of data residing in 23,422 files on a 5GB partition, versus just under 3 minutes, 30 seconds for Diskkeeper (see table). But Diskkeeper left the partition with more excess fragments and files still broken up.

Windows XP's Disk Defragmenter took slightly longer than Diskkeeper, at 3 minutes, 50 seconds, and it left more excess fragments but, oddly, fewer fragmented files. Also, the Windows utility left more free fragments in the most fragmented file on disk.

In keeping with Diskkeeper's philosophy of producing better defragmenting over time, we reran its product a second time on the same partition. This time the program completed quickly, in just 1 minute, 23 seconds. A second pass produced marginally better results, cutting the total number of excess fragments to 1,281. A third pass dropped that to 991.

The three products also provided very different reports, both before and after defragmentation. Disk Defragmenter was the most sparse, with only a small text file for statistics. Its graphical display was similar to that of Diskkeeper but was confined to a simple line. PerfectDisk provided an extensive, nicely formatted report that was easy to save and use, but its graphical display was more difficult to read. It indicated the difference between fragmented and nonfragmented files in a way that only a tiny white border around each graphical data block, with no other color differentiation except for type of file use.

Diskkeeper's graphical report was the easiest to read, with fragmented areas in red and unfragmented ones in blue. But it provided little in the way of statistics and generally presented these in a pop-up window that didn't even have a button on it for saving the message.

PerfectDisk didn't complain about our nearly full test disk, but Diskkeeper notified us during each test run that the drive was too full (it wanted to see 20% free space), and the program warned that this was a bigger problem than fragmentation.

While PerfectDisk comes out ahead on the strength of its defragmenting abilities and statistics-filled reports, Diskkeeper runs much faster and provides reports that are easier to read.

The defragmenting utility that comes with Windows is adequate but not nearly as effective as the other two products.

If the length of time required to defragment is critical, then Diskkeeper is the obvious choice. For extreme situations and much more complete defrag-

mentation, PerfectDisk is the clear winner. The Windows XP utility is, of course, free and better than nothing. Before making a choice, however, administrators should do their own testing using files and disk capacities that closely mirror their specific environments. **Q 57550**

Kay is a Computerworld contributing writer in Worcester, Mass. Contact him at mkay@charter.net.

Disk Defragmenter Test Results

Computerworld tested PerfectDisk and Diskkeeper on a 5GB Seagate ATA disk drive partition containing 23,422 highly fragmented files. To challenge the programs, disk drives were filled to 85% of capacity (80%, including reserved space for the master file table). Results for Windows XP's defragmentation utility are also shown for comparison.

	Fragmented disk	PerfectDisk 7	Diskkeeper 9	Windows XP
Time to defrag	Not applicable	10:06	3:30/1:14	3:56
Largest free space	2.9MB	115.7MB	10.9MB/2MB	6.9MB
Fragmented files and directories	1,040	1	121/10	101
Excess fragments in partition	5,166	1	1,782/1281	1903
Size of most fragmented file	1.2MB	0.1MB	59.8MB/59.8MB	59.8MB
Largest number of fragments in most fragmented file	296	2	144/132	154
Fragments per file	104	1	1.06/1.05	1.08

GOOD HAIR DAY? GO VIDEO.
BAD HAIR DAY? GO VOICE.

Whether you need voice video or even data conversion, Polycom has a solution for your business. So you can talk like a multi-millionaire, your hair is a wreck. To learn more about looking and sounding great, visit polycom.com/experience



VIDEO VOICE DATA WEB YOURS. GREAT THINGS HAPPEN.

METHOD AND BENEFITS

Go online to find out how Computerworld put the defragmenters through their paces. QuickLink.57552

Defragmenting makes sense in some situations — but not at QuickLink.57553
www.computerworld.com



TROJAN HORSES



**TURNED AWAY
AT THE GATE**

Microsoft Security

Microsoft

Microsoft

TIME WARNER CABLE

Point B

Time Warner Cable has the resources to better serve your customers. With a wholly owned, end-to-end network, we're working with you to develop the optimal solution for your environment—Time Warner Cable delivers business class service. Add to that, standard and customized SLAs, along with a full suite of data, video, and security solutions. Teleworker Solutions, Branch Office Connectivity—and you have a scalable infrastructure to manage information, secure assets and realizing the value on your IT investment. That's the point of business.

www.rrbiz.com
1-866-689-3678



TIME WARNER
CABLE

Business Class

JON KLEINBERG is a computer scientist with a reputation for tackling important, practical problems and, in the process, deriving deep mathematical insights," says the Web site of the John D. and Catherine T. MacArthur Foundation. Kleinberg, a professor of computer science at Cornell University, was a recent winner of a MacArthur Fellowship, often referred to as a "genius" grant.

Kleinberg's research covers a diverse range of topics, including com-

puter and social networking, network routing and search, genomics and protein structure analysis. He has found surprising similarities in the underpinnings of these disciplines.

For example, he discovered how to build networks so that one node can connect to a faraway node efficiently and without knowledge of the overall network topology. The idea builds on the concept of "six degrees of separation," which holds that any two people can find connections to each other



Shrinking DEGREES OF SEPARATION

MacArthur prize winner connects people as well as disciplines.

BY GARY ANTHES

FUTURE WATCH

via shared relationships with others. Kleinberg's discoveries have influenced the design of decentralized peer-to-peer file-sharing services such as Freenet and social networks such as LiveJournal.com.

When he worked at IBM, Kleinberg showed how search engines can be improved by considering not only a site's content, but also the number and quality of links to it. He developed the concept of "authorities" (a PC's manufacturer, for example) and connecting "hubs" (reviews of that PC), and he figured out how to recursively find the best hubs and authorities for a given search. His algorithms can also be used to define and explain social groups and their connections. In a recent interview, he told *Computerworld* where some of those ideas could lead.

Are the major public search engines today using your network search principles? Yes, but exactly what they do is a closely guarded secret. They all have very extensively tuned methods that combine link information with content information. The search engine that most directly incorporates hubs and authorities is Teoma, used by Ask Jeeves.

Is search a mature technology? It's still in its early stages. The more that's done, the more it becomes clear it's a very hard problem. What you'd like a search engine to do is simulate the experience of talking with someone very knowledgeable about a topic. Instead, you type a few words into a box, and it

gives you some links. What's impressive is how far you can get with that.

What's an example of a question you'd like to ask the search engine of the future?

"What's been the reaction to the release of Mac OS X Tiger? Have people been happy with it or not happy, and how is Apple responding?" You can hunt around until you find a page where some human has answered that, but there's no way to get a search engine to answer it.

What else is in the future of search? These

tools weren't designed to track events unfolding hour by hour. When we use the Web to keep up with breaking news, we don't use search engines, we go to a few news Web sites. But it doesn't have to be that way. You are starting to see, especially in the blogging domain, people trying to create tools that have some of that capability.

Where will these kinds of advancements come from? There's a lot of feedback between university research and companies like Google, Yahoo and Microsoft. The companies are running high-volume services that are extremely innovative, but it's very hard for them to

pursue all those interesting leads and possible dead ends. In universities, you may have the freedom to pursue slightly zany ideas that might not pan out.

Are there any lessons in your research for information systems developers? If you're going to think of new online media or new ways of communicating online—not just IMing, but Internet telephony and Skype and all those things—then you're going to have to think about social networks and how people use them. In the end, these tools are to connect people to each other and to information, and the way people network or fail at that is influenced by the nature of the tools.

Any other advice for IT people? Political discourse seems to be getting more polarized. Something we don't understand is to what extent that's an effect of the media we're using. Is there something about blogging and online discussion that causes polarization in some subtle way? It's an important challenge for

people on the computer side, because it's within our power to create tools that shape discourse. For us to be able to help make civil dialogues more productive would be an amazing and wonderful thing. ☐ 5728



Buy nothing now. Learn how to buy even less later.

No commitments. No obligations. A half hour is all we need to demonstrate how Pillar Axiom™ drives down networked storage costs. By combining SAN and NAS into one system, it dramatically reduces administration and support. With top-tier performance and scalability on a single software license, it eliminates unexpected fees. And because our storage system can often be installed for less than some companies' storage maintenance budgets, it can really save on the bottom line.

You've got nothing to lose and everything to gain by hearing our honest approach to networked storage. Call **1-877-252-3706** to schedule a briefing or visit **www.pillardata.com/less**

Learn the truth about networked storage.

**Get your FREE subscription
to AXIOM Journal**

pillar
DATA SYSTEMS

© 2005 Pillar Data Systems Inc. All rights reserved. Pillar Data Systems, Pillar Axiom, and the Pillar logo are all trademarks of Pillar Data Systems.



BRIEFS

Certus Launches Compliance Portlet

Certus Software Inc. has introduced Governance360, a compliance portlet system. Companies can use Governance360 to include information such as controls data, summaries and alerts in a financial management portal, said Certus. The system can also segment a company's financial activities by functional area. The Web-services-based system will ship by year's end. Pricing for the product hasn't been finalized.

Enterasys Rolls Out Wireless Switch

Enterasys Networks Inc. has announced the R8400B 8400 wireless switch, which has four Gigabit Ethernet connections and supports up to 120 access points in a Wi-Fi network. The switch is available now for \$11,995.

Tandberg Releases Multimedia System

Tandberg ASA announced the Tandberg MXP Profile Series, a line of endpoint devices that feature flat-panel displays and stereo-quality audio for videoconferencing and multimedia presentations. The product line includes the 8000 MXP Profile, which is designed for midsize to large groups and comes with either a 43-in. or 50-in. flat-panel plasma display. Pricing for Model 8000 starts at \$33,900.

Astaro Adds Two Antivirus Tools

Astaro Corp. has launched Version 6.1 of its Astaro Security Gateway software. The new release includes integrated virus-scanning tools from Kaspersky Lab and ClamAV. It also scans Web addresses in messages and checks them against databases of Web addresses associated with activities like spamming, said Astaro. Pricing starts at \$330 for the software alone and at \$605 for a Web appliance with the software.

ROBERT L. MITCHELL

Endpoint Security: Let the Users Grumble

THE SECURITY MECHANISMS that protect the corporate network and enterprise applications may be well established, but for many organizations, endpoint security remains a weak point — and a big headache.

You say you haven't done anything about that headache? Then take two aspirin and get going, because the cost of doing nothing is on the rise. Taken together, the compliance requirements for protecting data against loss, the risk to the organization of intellectual property theft, and the support challenges arising from corrupted PCs and laptops make a strong case for tighter endpoint controls.

The problem is, users don't like endpoint security controls. They will accept antivirus and antispyware agents, and they may grudgingly accept a desktop firewall. But most users will grumble about anything that restricts the flexibility and freedom that the PC has come to represent. Overcoming those objections is a challenge. So is finding the right controls.

Gene Peters is deploying port-blocking software that allows policy-based control over the end user's USB, infrared and PC Card slots. A USB disk can carry a lot of information out the door. "It's just taking the level of paranoia to the next degree," says Peters, director of information services at the Philadelphia Stock Exchange.

The software, from Safend Ltd. in Tel Aviv, leverages policies set in Active Directory and can allow one type of device to connect but not another. So, how do Peters' users react to such in-your-face controls? "We've gotten all the pushback, but we've worked out all the issues and pretty much gotten our way," he says.



Part of that process is getting top management's support. Another part is getting the user to understand that in a business setting, there is no "personal" in "personal computer." These are business machines. If users don't like it, they should "suck it up and deal," as my preteen at home would say.

Content analysis and blocking tools close another avenue for endpoint data loss. For example, Packetshare from Palisade Systems Inc. analyzes content, classifies it as private or public, and restricts outbound transmission of that data by examining each packet in outbound data streams, such as in instant messaging exchanges. The edge appliance can also block the protocols used by unauthorized e-mail, instant messaging, or peer-to-peer programs.

In contrast, enterprise rights management (ERM) systems allow the distribution of protected content but must first encrypt it and require authentication before the content can be read [QuickLink 5519]. The ERM approach is more intrusive — the user must classify documents at the time of creation — but more comprehensive. ERM systems restrict who can view a document after it leaves the organization and whether it can be copied or printed.

The stability of the end device itself is a security concern, since unwanted plug-ins, spyware, malware and other software the user might knowingly or unknowingly load can create unnes-

sary help desk headaches — and open new holes through which corporate data can pass. Policies set in Active Directory or through PC configuration management tools can lock down desktops to prevent the entry of such programs.

For example, Peters uses Active Directory policies that are so restrictive that users can't even install a browser plug-in. But many IT organizations can't get away with that. Users want — and management generally supports — some level of flexibility.

Application-blocking tools provide some wiggle room. Start-up Bit9 Inc.'s Parity tracks all programs and creates a "gray list" of unknown executables. Administrators can set policies by user or group that either allow execution, stop the program from executing until the administrator reviews and approves it, or allow the user to run the program but issue an alert to the administrator. Users can download unknown programs, but those programs won't execute.

By casting a wider net to catch all unwanted programs, organizations can sidestep the challenge of trying to identify and separate out spyware, viruses and other malware while also controlling the installation of "legitimate" programs that could create application conflicts or other stability problems.

All of these tools and approaches can be helpful, but the trick is balancing your organization's risk tolerance against the desire for end-user flexibility. While a total lockdown may not be feasible in your company, tighter controls are the way of the future. Ultimately, most users will have to accept that. If they don't, well, it's a new era. They'll just have to suck it up and deal.

Q 57596

WANT OUR OPINION?

For more columns and links to our archives, go to www.computerworld.com/pollbooks

BRIEFS

Cerbus Launches Compliance Portlet

Cerbus Software Inc. has introduced Governance360, a compliance portlet system. Companies can use Governance360 to include information such as controls data, summaries and alerts in a financial management portal, said Cerbus. The system can also segment a company's financial activities by functional area. The Web-service-based system will ship by year's end. Pricing for the product hasn't been finalized.

Enterasys Rolls Out Wireless Switch

Enterasys Networks Inc. has announced the EWS-4000 wireless switch, which has four Gigabit Ethernet connections and supports up to 120 access points in a Wi-Fi network. The switch is available now for \$11,995.

Tandberg Releases Multimedia System

Tandberg ASA announced the Tandberg MSP Profile Series, a line of endpoint devices that feature flat-panel displays and stereo-quality audio for videoconferencing and multimedia presentations. The product line includes the 8000 MSP Profile, which is designed for rotation to large groups and comes with either a 43-in. or 50-in. flat-panel plasma display. Pricing for Model 8000 starts at \$33,500.

Astaro Adds Two Antivirus Tools

Astaro Corp. has launched Version 6.1 of its Astaro Security Gateway software. The new release includes integrated virus-scanning tools from Kaspersky Lab and ClamAV. It also scans Web addresses in messages and checks them against databases of Web addresses associated with phishing site operations, said Astaro. Pricing starts at \$250 for software alone and at \$495 for a Web appliance with the software.

ROBERT L. MITCHELL

Endpoint Security: Let the Users Grumble

THE SECURITY MECHANISMS that protect the corporate network and enterprise applications may be well established, but for many organizations, endpoint security remains a weak point — and a big headache.

You say you haven't done anything about that headache? Then take two aspirin and get going, because the cost of doing nothing is on the rise. Taken together, the compliance requirements for protecting data against loss, the risk to the organization of intellectual property theft, and the support challenges arising from corrupted PCs and laptops make a strong case for tighter endpoint controls.

The problem is, users don't like endpoint security controls. They analyze content, restricts outbound transmission of that data by examining each packet in outbound data streams, such as in instant messaging exchanges. The edge appliance can also block the protocols used by unauthorized e-mail, instant messaging or peer-to-peer programs.

In contrast, enterprise rights management (ERM) systems allow the distribution of protected content but must first encrypt it and require authentication before the content can be read (QuickLink 5519). The ERM approach is more intrusive — the user must classify documents at the time of creation — but more comprehensive. ERM systems restrict who can view a document after it leaves the organization and whether it can be copied or printed.

The stability of the end device itself is a security concern, since unwanted plug-ins, spyware, malware and other software the user might knowingly or unknowingly load can create unnece-



Part of that process is getting top management's support. Another part is getting the user to understand that in a business setting, there is no "personal" in "personal computer." These are business machines. If users don't like it, they should "suck it up and deal," as my preteen at home would say.

Content analysis and blocking tools close another avenue for endpoint data loss. For example, PacketShare from Palisade Systems Inc. analyzes content, classifies it as private or public, and restricts outbound transmission of that data by examining each packet in outbound data streams, such as in instant messaging exchanges. The edge appliance can also block the protocols used by unauthorized e-mail, instant messaging or peer-to-peer programs.

In contrast, enterprise rights management (ERM) systems allow the distribution of protected content but must first encrypt it and require authentication before the content can be read (QuickLink 5519). The ERM approach is more intrusive — the user must classify documents at the time of creation — but more comprehensive. ERM systems restrict who can view a document after it leaves the organization and whether it can be copied or printed.

The stability of the end device itself is a security concern, since unwanted plug-ins, spyware, malware and other software the user might knowingly or unknowingly load can create unnece-

sary help desk headaches — and open new holes through which corporate data can pass. Policies set in Active Directory or through PC configuration management tools can lock down desktops to prevent the entry of such programs.

For example, Peters uses Active Directory policies that are so restrictive that users can't even install a browser plug-in. But many IT organizations can't get away with that. Users want — and management generally supports — some level of flexibility.

Application-blocking tools provide some wiggle room. Start-up Bit? Inc.'s Parity tracks all programs and creates a "gray list" of unknown executables. Administrators can set policies by user or group that either allow execution, stop the program from executing until the administrator reviews and approves it, or allow the user to run the program but issue an alert to the administrator. Users can download unknown programs, but those programs won't execute.

By casting a wider net to catch all unwanted programs, organizations can sidestep the challenge of trying to identify and separate out spyware, viruses and other malware while also controlling the installation of "legitimate" programs that could create application conflicts or other stability problems.

All of these tools and approaches can be helpful, but the trick is balancing your organization's risk tolerance against the desire for end-user flexibility. While a total lockdown may not be feasible in your company, tighter controls are the way of the future. Ultimately, most users will have to accept that. If they don't, well, it's a new era. They'll just have to suck it up and deal. **EW766**

WANT OUR OPINION?

For more columns and to let us know, go to www.computerworld.com/pollbox

7th Annual
COMPUTERWORLD

100 PREMIER IT LEADERS CONFERENCE

March 5-7, 2006
JW Marriott Desert
Springs Resort
Palm Desert, California

All IT End User
Attendees will receive
a complimentary,
autographed copy of
Richard Clarke's new book,
The Scorpion's Gate



To see complete agenda details
and to register now, visit:

www.premier100.com

Owned and Produced by
COMPUTERWORLD

Mastering IT Agility, Accelerating Business Innovation

Featured Speakers include:



RICHARD CLARKE
Former White House Senior Advisor and
Author of *The Scorpion's Gate*



RALPH SZYGENDA
Group Vice President, G & Services and CIO
General Motors



MICHAEL HUGOS
CO
Network Services Company



THORNTON MAY
Futurist and Computerworld
Columnist



DON TENHANT
Editor in Chief
Computerworld



JULIA KING
Executive Editor, Events and National Correspondent
Computerworld

The Leading Executive Conference for:

- CIOs and CSOs
- Vice Presidents of IT
- Enterprise IT Directors

Get advice from award-winning CIOs and industry experts on:

- **EXECUTING** the global IT agenda
- **SUPERCHARGING** infrastructure to
create new products and services
- **ACHIEVING** security and disaster
recovery excellence
- **READYING** next-generation IT-savvy
business leaders
- **ADVANCING** IT governance and
risk/reward balance

See additional from companies including:

Go to M250/88

CONFERENCE
UNDERWRITER

AVAYA

PLATINUM SPONSORS

APC
Uninterruptible Power Supplies

Engage
Technology Solutions

COMPUWARE

FUJITSU

INTERSYSTEMS

PARCER/INTECH/COMPTON

SAS
The Power to Know

SupportSoft

SYBASE
The Intelligent Database

Teradata
Business Intelligence

Verisign
The Trust of Your World

YOUR SALARY SEARCH ENGINE.

2006
Salary Guide

THE GUY IT. THE SPEAK IT. THE KNOW IT.



The IT world is an ever-changing place. So if you're a technology manager looking to staff up, the **FREE 2006 Salary Guide** is an essential resource. You'll find the latest salary ranges for tech-related positions, in-depth regional salary analysis, the IT hiring outlook, top skills in demand – and more.

*The 2006 Salary Guide is your personal search engine for IT salary information. Request your **FREE** copy today!*

800.793.5533 • rht.com

WE GET IT. WE SPEAK IT. WE KNOW IT.



Robert Half[®]
Technology

Information Technology Professionals

A Robert Half International Company

COMPUTERWORLD SALARY SURVEY 2005

AFTER FIVE YEARS AS a LAN specialist at Albany International Corp. in Albany, N.Y., a \$1 billion maker of manufacturing products for the paper industry, Stephen Nolasco found himself with a 4.1% raise in 2005. Last year's raise wasn't any better. Did he complain? Grumble over his

coffee? Stage a coup d'état with other IT staffers? Nope. He looked at the situation philosophically.

"I guess that's the way the cookie crumbles," Nolasco says. "I'll take 4% over nothing. We're getting basically cost-of-living raises."

Where's the anger? The pessimism? The boiling point that IT employees were so close to reaching in 2004 when salaries then rose just 3%?

Perhaps repetition breeds resignation.

For the fourth year in a row, IT workers across the board received only modest raises — their pay increased by an average of just 3% in 2005, matching last year's average salary increase, according to Computerworld's 19th Annual Salary Survey, which studied the compensation and bonuses of 14,253 IT workers.

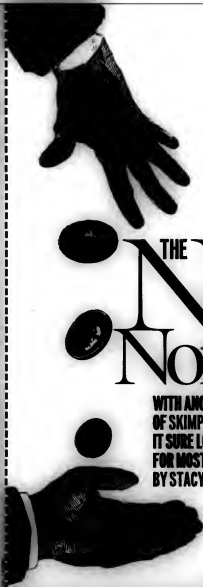
IT raises still lagged slightly behind the average of about 3.2% for all U.S. workers as reported by the Bureau of Labor Statistics. While the majority of respondents (69%) said their 2004 base salary increased from one year ago, 31% experienced either no change in salary or had their pay cut.

The Good News

So here we are, another flat year. But there is some good news. Bonuses increased 2.8% in 2005, compared with 1% last year. Is that enough to keep employees happy? Apparently so, according to the survey. When asked about their overall satisfaction

with their jobs, 63% of the respondents said they were either "very satisfied" or "satisfied." Only 18% expressed dissatisfaction.

Are cost-of-living-only raises the new normal? Some industry analysts say yes, at least for now. "A return to normalcy has clearly happened over the last few years," explains David Van De Voort,



THE New Normal

WITH ANOTHER YEAR
OF SKIMPY 3% RAISES,
IT SURE LOOKS THAT WAY
FOR MOST IT WORKERS.
BY STACY COLLETT

ONLINE EXCLUSIVE

SMART SALARY
TOOL 2005

COMPUTERWORLD SALARY SURVEY 2005

AFTER FIVE YEARS AS a LAN specialist at Albany International Corp. in Albany, N.Y., a \$1 billion maker of manufacturing products for the paper industry, Stephen Noisseau found himself with a 4.1% raise in 2005. Last year's raise wasn't any better. Did he complain?

Grumble over his coffee? Stage a coup d'état with other IT staffers? Nope. He looked at the situation philosophically. "I guess that's the way the cookie crumbles," Noisseau says. "I'll take 4% over nothing. We're getting basically cost-of-living raises."

Where's the anger? The passion? The boiling point that IT employees were so close to reaching in 2004 when salaries then rose just 3%? Perhaps repetition breeds resignation.

For the fourth year in a row, IT workers across the board received only modest raises—their pay increased by an average of just 3% in 2005, matching last year's average salary increase, according to Computerworld's 19th Annual Salary Survey, which studied the compensation and bonuses of 14,253 IT workers.

IT raises still lagged slightly behind the average of about 3.2% for all U.S. workers as reported by the Bureau of Labor Statistics. While the majority of respondents (69%) said their 2004 base salary increased from one year ago, 31% experienced either no change in salary or had their pay cut.

The Good News

So here we are, another flat year. But there is some good news. Bonuses increased 2.8% in 2005, compared with 1% last year. Is that enough to keep employees happy? Apparently so, according to the survey. When asked about their overall satisfaction

with their jobs, 63% of the respondents said they were either "very satisfied" or "satisfied." Only 18% expressed dissatisfaction.

Are cost-of-living-only raises the new normal? Some industry analysts say yes, at least for now. "A return to normalcy has clearly happened over the last few years," explains David Van De Voort,



THE New Normal

WITH ANOTHER YEAR
OF SKIMPY 3% RAISES,
IT SURE LOOKS THAT WAY
FOR MOST IT WORKERS.
BY STACY COLLETT

ONLINE EXCLUSIVE

SMART SALARY TOOL 2005

Smart Salary Tool 2005
An online salary survey tool
that helps IT professionals
compare their salary to the
market. Visit www.computerworld.com/salary
for more information.

global leader of the IT Workforce Effectiveness group at Mercer Human Resource Consulting LLC in Chicago. The Internet bust, the subsequent economic recovery and the move toward outsourcing have kept salary increases low and employees relatively quiet about lackluster pay raises.

"All that special treatment that IT people were getting before Y2K and Web-enabled just stopped — the high pay raises the special bonuses," Van De Voort explains. "Many employers didn't even bother to explain it, and employees didn't squeal," for fear that their jobs might be outsourced to lower-paid workers. Nearly half (48%) of all respondents said that their organizations outsource work.

One project manager at a prominent East Coast financial company, knows that fear. "During Y2K, the company was lucky to get any Inco IT hires! When they found somebody who knew what they were doing, they treated them with respect and made them part of the team." Now the sentiment toward IT employees has changed. "Senior management says, 'If you don't like the way we'll get somebody in India to do it.' The computer people are seen more as part of the technology rather than part of the human resource," says the project manager, who asked not to be named.

The good news is the trend toward offshoring has slowed a bit as companies have become more aware of the quality of work and technical support they receive from overseas workers, says Van De Voort.

"The whole offshoring dynamic feels a little less pressing than a year ago. But I think domestic outsourcing will continue to be a factor," he says.

Many Already Feel Well Compensated

Christina Shoppell was hired as a Web developer at Providence, R.I.-based Case New England Health System at the height of the tech boom in early 2000. She normally receives a 7% annual raise, and that's OK with her. "I started out with a great salary. The bubble hasn't burst yet," says Shoppell, who is now a senior Web developer. Other Web developers haven't fired nearly as well this year, with an average pay increase of 2.5%, according to the survey.

Increases were about the same at all levels: The average salary for a middle IT manager in 2005 is \$90,000, up from \$88,208 last year. Senior IT managers earn an average of \$129,638, up from \$126,120 in 2004. Todd Canby, an IT manager at Harvey Vogel Manufacturing Co. in Woodbury, Minn., saw his pay increase just 2% this year. "I know I'm pretty well in line with the industry," says the eight-year veteran. "As long as I keep up with inflation, I'm just fine. There are a lot of other factors in job satisfaction."

The worst is over for Drummond Co. in Birmingham, Ala. Over the past four years, the \$800 million coal mining company decreased its budget by 30%. Now business is picking up, and IT staffers received a 3.6% pay raise. "I can't say there's anybody who doesn't want their salary to accelerate faster," says CIO John Fallis. "As a company, we've been doing very well. While salaries haven't reflected that, the bonuses have."

Fallis gave his direct reports bonuses equal to 7% to 9% of their annual pay this year. Lower-level staffers received about 5%.

Continued on page 44

BIGGER RAISES, BUT NOT ALWAYS HIGH PAY

CHIEF SECURITY OFFICERS earned the highest pay increases for the second year in a row at 6%, according to Computerworld's annual salary survey. But while CISOs are in demand, their salaries haven't reached stratospheric levels.

"There's been a convergence of supply and demand, so [companies] haven't had to pay them lots of money," says David Van De Voort, global leader of the IT Workforce Effectiveness group at Mercer Human Resource Consulting. Many CISOs are likely former senior consultants who were let go from major consulting firms that have suffered through a slow economy, he explains.

In June, Kris Palmer left a job as information security officer for the state of Florida, where she earned \$63,000 annually, for an \$80,000-a-year CISO position at The Menlo Co., a \$4.5 billion maker of phos-



phate and potash crop nutrients in Riverview, Fla. Though her salary lags behind the average salary for senior IT managers (\$129,638),

she still feels well compensated. "That's the salary they were starting at," Palmer says, but she notes that she'll be eligible for a 10% bonus in one year.

Meanwhile, other security roles, such as business continuity and disaster recovery experts, haven't seen much of a pay jump either.

"We haven't yet seen the pay for those jobs take a big turn upward," Van De Voort says. That's because systems security is a shared responsibility. "Network developers make sure the network is secure, and applications folks build those applications to be secure. So everybody has a hand in it," he says.

But information security specialists, security managers and network managers all received higher-than-average raises this year (3.8% to 4.2%), according to the survey.

— Stacy Collett

SALARIES

Across the board, salaries increased by 3%

Has your salary increased or decreased in 2005?



AVERAGE INCREASE 6%
AVERAGE

INCREASES BY NAME

Senior management Base: 2.8%	3%
Middle management Base: 4.4%	2.6%
IT staffers Base: 12.7%	2.6%

Note: Percentages are based on IT workers employed full time or part time as of 10/1/2005

BONUSES

Across the board, bonuses increased by 2.8%

Have your bonuses increased or decreased in 2005?



AVERAGE INCREASE 10%
AVERAGE

BONUS

3%	3%
2.6%	2.9%
2.6%	2.3%

OVERALL INCREASES

Chief security officer
Computer operator
Information security specialist
Information security manager
Network manager

OVERALL INCREASES

Senior systems analyst
Database administrator
Manager of commerce

GENDER GAP PERSISTS

Men pulled down higher increases in salary and bonuses than their female colleagues in IT.

SENDER	BONUS
Male	2.8% 2.8%
Female	2.6% 2.3%

global leader of the IT Workforce Effectiveness group at Mercer Human Resource Consulting LLC in Chicago. The Internet bust, the subsequent slow economic recovery and the move toward outsourcing have kept salary increases low and employees relatively quiet about lackluster pay raises.

"All that special treatment that IT people were getting [before Y2K and Web-enabling] just stopped the high pay raises, the special bonuses," Van De Voort explains. "Many employers didn't even bother to explain it, and [employees] didn't squeal," for fear that their jobs might be outsourced to lower-paid workers. Nearly half (48%) of all respondents said that their organizations outsource work.

One project manager at a prominent East Coast financial company knows that fear. "During Y2K, the company was lucky to get any [new IT hires]. When they found somebody who knew what they were doing, they treated them with respect and made them part of the team." Now the sentiment toward IT employees has changed. "Senior management says, 'If you don't like the work, we'll get somebody in India to do it.' The computer people are seen more as a part of the technology rather than part of the human resource," says the project manager, who asked not to be named.

The good news is the trend toward offshoring has slowed a bit as companies have become more aware of the quality of work and technical support they receive from overseas workers, says Van De Voort. "The whole offshoring dynamic feels a little less pressing than a year ago. But I think domestic outsourcing will continue to be a factor," he says.

Many Already Feel Well Compensated

Christina Shoppell was hired as a Web developer at Providence, R.I.-based Care New England Health System at the height of the tech boom in early 2000. She normally receives a 7% annual raise, and that's OK with her. "I started out with a great salary. The bubble hadn't burst yet," says Shoppell, who is now a senior Web developer. Other Web developers haven't fared nearly as well this year, with an average pay increase of 2.9%, according to the survey.

Increases were about the same at all levels: The average salary for a middle IT manager in 2005 is \$90,699, up from \$86,206 last year. Senior IT managers earn an average of \$129,835, up from \$126,130 in 2004.

Todd Caughy, an IT manager at Harvey Vogel Manufacturing Co. in Woodbury, Minn., saw his pay increase just 2% this year. "I know I'm pretty well in line with the industry," says the eight-year veteran. "As long as I keep up with inflation, I'm just fine.

There are a lot of other factors in job satisfaction." The worst is over for Drummond Co. in Birmingham, Ala. Over the past four years, the \$800 million coal mining company decreased its budget by 20%. Now business is picking up, and IT staffers received a 3.6% pay raise. "I can't say there's anybody who doesn't want their salary to accelerate faster," says CIO John Fallis. "As a company, we've been doing very well. While salaries haven't reflected that, the bonuses have."

Fallis gave his direct reports bonuses equal to 7% to 9% of their annual pay this year. Lower-level staffers received about 5%.

Continued on page 44

CHIEF SECURITY OFFICERS: BIGGER RAISES, BUT NOT ALWAYS HIGH PAY

CHIEF SECURITY OFFICERS earned the highest pay increases for the second year in a row at 6%, according to Computerworld's annual salary survey. But while CSOs are in demand, their salaries haven't reached stratospheric levels.

"There's been a convergence of supply and demand, so [companies] haven't had to pay them lots of money," says David Van De Voort, global leader of the IT Workforce Effectiveness group at Mercer Human Resource Consulting. Many CSOs are likely former senior consultants who were let go from major consulting firms that have suffered through a slow economy, he explains.

In June, K/6 Palmer left a job as information security officer for the state of Florida, where she earned \$68,000 annually, for an \$80,000-a-year CSO position at The Mosaic Co., a \$4.5 billion maker of pho-



tos still feels well compensated. "That's the salary they were starting at," Palmer says, but also notes that she'll be eligible for a 10% bonus in one year.

Meanwhile, other security roles, such as business continuity and disaster recovery experts, haven't seen much of a pay jump either.

"We haven't put even the pay for those jobs takes a big turn upward," Van De Voort says. That's because systems security is a shared responsibility. "Network developers really own the network to secure, and applications folks build those applications to be secure. So everybody has a hand in it," he says.

But information security specialists, security managers and network managers all received higher-than-average raises this year (3.8% to 4.2%), according to the survey.

—Steve Cullot

BY THE NUMBERS

SALARIES



AVERAGE INCREASE 6%
AVERAGE DECREASE 9%

INCREASED BY MORE	SALARY	BONUS
Senior management from 2.0%		
Middle management from 4.0%		
IT staffers from 1.2%		

Note: Percentages are based on IT workers employed full time or part time in an IT department.

BONUSES



AVERAGE INCREASE 10%
AVERAGE DECREASE 25%

INCREASED BY MORE	SALARY	BONUS
Senior management from 2.0%		
Middle management from 4.0%		
IT staffers from 1.2%		

ABOVE-AVERAGE OVERALL INCREASES

Chief security officer	6%
Computer operator	4.4%
Information security specialist	4.2%
Information security manager	3.8%
Network manager	3.6%

BELOW-AVERAGE OVERALL INCREASES

Senior systems analyst	1.9%
Database administrator	1.7%
Manager of e-commerce	1%

GENDER GAP PERSISTS

Men pulled down higher increases in salary and bonuses from their female counterparts in IT.

GENDER	SALARY	BONUS
Male		
Female		

DLT-V4

	DLT-V4	DLT-V4	NOTES
CAPACITY:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4X THE CAPACITY
SPRING:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3X FASTER
POWER TOOL GUN:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2X BETTER
STANDARD DESIGN:	<input type="checkbox"/>	<input type="checkbox"/>	



DLT-V4

DLT-V4 is a hand
powered tool that
the user can
use to power
the same results as the
DLT-V4.



Continued from page 42

The average size of bonuses reported by survey respondents this year was 28%, up from 1% in 2004. "As companies continue to struggle with the ability to meet employee needs within their fixed cost budgets, they are looking to variable pay like signing bonuses, spot cash awards and project milestone awards," to reward employees, says Kristen F. Adkisson, leader of Mercer's Employee Rewards business.

Less Stress, More Security

The major stress-inducing factors affecting IT workers all dropped slightly this year. Fewer than half of our survey takers (42%) reported that they find their jobs "stressful" or "very stressful." That's high but lower than last year's 52%. Meanwhile, 57% indicated they were "very secure" or "secure" in their jobs, up two percentage points from 2004.

"For me, the stress level is very low," says Albham International's Novaceau. "The company closed a couple of plants over the last two years. But they've done with that for the foreseeable future. I feel very secure."

Some employees say they don't mind a bigger workload, as long as it's stress-free. At CMC New England Health System, the Web-development workload is heavy. "There's a backlog of requests, but not so much stress because people are willing to wait," Shoppell says. "They just don't have the same expectations in the health care industry as in the corporate world," where deadlines are more difficult to maneuver, she explains.

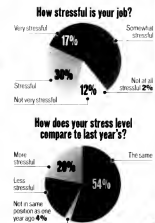
"Pent-up demand for development work makes employees think, 'My company needs me.' They haven't been feeling that for a while," says Van De Voort.

At Drummond, budget cuts were driven by the IT department, which eliminated all of the company's mainframes, got rid of consultants and streamlined operations. "We were able to eliminate costs and upgrade technology, which employees love, and we put

a bunch of new toys that we really like working with," Falls says.

Get used to the new normal, at least for now, says Van De Voort. When it comes to salaries, "IT is like everybody else and probably will be until the economy improves," he says. "That may have been starting to happen, but we now have some general concerns on the economy with oil prices and other things."

"The IT workforce and concerns about being able



to recruit IT professionals will be a leading indicator of real economic recovery, because we know that there is some pent-up need for IT work." **OW363**

Collett is a Computerworld contributing writer. Contact her at steele@collett.com.

CHARTS: For compensation information for 30 IT job titles, turn to

TOTAL COMPENSATION

New England: New Hampshire, Massachusetts, Connecticut, Rhode Island, Pennsylvania

Mid-Atlantic: New York, New Jersey, Delaware

South Atlantic: Delaware, District of Columbia, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Puerto Rico, U.S. Virgin Islands

North Central: Wisconsin, Michigan, Illinois, Indiana, Ohio, North Dakota, South Dakota, Minnesota, Nebraska, Iowa, Kansas, Missouri

South Central: Kentucky, Tennessee, Mississippi, Alabama, Oklahoma, Arkansas, Louisiana, Texas

Mountain: Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico

Pacific: Alaska, Washington, Oregon, California, Hawaii, Guam

	NEW ENGLAND	MIDDLE ATLANTIC	SOUTH ATLANTIC	NORTH CENTRAL	SOUTH CENTRAL	MOUNTAIN	PACIFIC
CIO/vice president of IT	\$156,326	\$184,307	\$154,939	\$184,357	\$187,123	\$160,151	\$168,875
Director of IT operations	\$112,329	\$123,134	\$101,253	\$104,313	\$100,031	\$90,994	\$121,039
IT manager	\$81,979	\$95,140	\$87,274	\$82,845	\$80,000	\$77,371	\$80,191
Project manager	\$95,126	\$102,089	\$100,728	\$89,622	\$89,873	\$82,559	\$99,266
Application development manager	\$103,251	\$105,703	\$101,879	\$97,029	\$87,684	\$85,505	\$109,048
Database administrator	\$92,419	\$80,307	\$83,105	\$82,996	\$76,232	\$79,355	\$88,530
Help desk/tech support specialist	\$61,589	\$49,082	\$50,926	\$44,897	\$43,785	\$44,757	\$56,684
Technology/business systems analyst	\$76,470	\$76,914	\$78,449	\$72,525	\$69,102	\$65,296	\$81,567
Network administrator	\$64,020	\$60,963	\$58,570	\$50,582	\$50,371	\$45,076	\$58,978
Network engineer	\$73,109	\$74,709	\$74,951	\$64,300	\$69,389	\$69,282	\$78,069
Programmer/analyst	\$76,307	\$87,654	\$87,696	\$64,867	\$68,157	\$63,184	\$80,048
Software developer	\$83,215	\$83,272	\$76,434	\$70,080	\$83,703	\$75,142*	\$100,872
Software engineer	\$85,099	\$81,387	\$81,479	\$80,885	\$84,402	\$87,423	\$93,625
Systems administrator	\$70,324	\$71,689	\$65,923	\$63,213	\$60,287	\$71,957	\$68,491
Systems analyst	\$73,641*	\$82,479	\$63,664	\$64,032	\$62,582	\$68,097	\$69,798
Senior systems analyst	\$78,926	\$84,315	\$81,086	\$78,429	\$84,582	\$81,032*	\$95,285
Systems architect	\$116,464	\$104,385	\$95,885	\$94,164	\$103,466	\$111,621	\$114,876

Gray text: The total base for this job title in this particular region was fewer than 30 responses but more than 10. These figures should be used for comparison only because they don't constitute a statistically significant sample.

* The total base for the job title in this particular region was lower than 10 responses but more than five. These figures should be used for comparison only.

Continued from page 42

The average size of bonuses reported by survey respondents this year was 2.8%, up from 1% in 2004.

"As companies continue to struggle with their ability to meet employee needs within their fixed-cost budgets, they are looking to variable pay like signing bonuses, spot cash awards and project milestone awards" to reward employees, says Steven E. Gross, leader of Mercer's Employee Rewards business.

Less Stress. More Security

The major stress-inducing factors affecting IT workers all dropped slightly this year. Fewer than half of our survey takers (47%) reported that they find their jobs "stressful" or "very stressful." That's high but lower than last year's 52%. Meanwhile, 57% indicated they were "very secure" or "secure" in their jobs, up two percentage points from 2004.

"For me, the stress level is very low," says Albany International's Noisseau. "The company closed a couple of plants over the last two years. But they're done with that for the foreseeable future. I feel very secure."

Some employees say they don't mind a bigger workload, as long as it's stress-free. At Care New England Health System, the Web development workload is heavy. "There's a backlog of requests, but not so much stress because people are willing to wait," Shoppell says. "They just don't have the same expectations in the health care industry as in the corporate world," where deadlines are more difficult to maneuver, she explains.

"Test-up demand for development work makes employees think, 'My company needs me.' They haven't been feeling that for a while," says Van De Voort.

At Drummond, budget cuts were driven by the IT department, which eliminated all of the company's mainframes, got rid of consultants and streamlined operations. "We were able to eliminate costs, upgrade technology, which employers love, and we got



a bunch of new toys that we really like working with," Fallis says.

Get used to the new normal, at least for now, says Van De Voort. When it comes to salaries, "IT is like everybody else and probably will be until the economy improves," he says. "That may have been starting to happen, but we now have some general concerns on the economy with oil prices and other things."

The IT workforce and concerns about being able

STRESS BUCKETS

How stressful is your job?



How does your stress level compare to last year's?



to recruit IT professionals will be a leading indicator of real economic recovery, because we know that there is some pent-up need for IT work." ■ 57063

Collett is a Computerworld contributing writer. Contact her at stevecollett@aol.com.

For compensation information for
30 IT job titles, turn to PAGE A8.

TOTAL COMPENSATION BY REGION

100-0000 100-0000 100-0000 100-0000 100-0000 100-0000 100-0000 100-0000 100-0000 100-0000

^aNew England: Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island.

© 1994 by Columbia Pictures Industries, Inc. All Rights Reserved.

* *Wheat-Schmitt: Columns, Daniel et al*

Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming.

© Mark Conant: Wrennets, Bridges, Road

Alaska, Calif., Conn., Idaho, Ill., Iowa, Ky., La.,
Maine, Mass., Mich., Minn., Miss., Mont., Neb.,
N.J., N.Y., Pa., S.C., Tenn., Tex., Va., W. Va.,
Wis., Wyo.

4 South Central Parkway, Eastmont,
Huntsville, Alabama 35894, Alabama,
United States

• **Chlorine:** 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1050, 1100, 1150, 1200, 1250, 1300, 1350, 1400, 1450, 1500, 1550, 1600, 1650, 1700, 1750, 1800, 1850, 1900, 1950, 2000, 2050, 2100, 2150, 2200, 2250, 2300, 2350, 2400, 2450, 2500, 2550, 2600, 2650, 2700, 2750, 2800, 2850, 2900, 2950, 3000, 3050, 3100, 3150, 3200, 3250, 3300, 3350, 3400, 3450, 3500, 3550, 3600, 3650, 3700, 3750, 3800, 3850, 3900, 3950, 4000, 4050, 4100, 4150, 4200, 4250, 4300, 4350, 4400, 4450, 4500, 4550, 4600, 4650, 4700, 4750, 4800, 4850, 4900, 4950, 5000, 5050, 5100, 5150, 5200, 5250, 5300, 5350, 5400, 5450, 5500, 5550, 5600, 5650, 5700, 5750, 5800, 5850, 5900, 5950, 6000, 6050, 6100, 6150, 6200, 6250, 6300, 6350, 6400, 6450, 6500, 6550, 6600, 6650, 6700, 6750, 6800, 6850, 6900, 6950, 7000, 7050, 7100, 7150, 7200, 7250, 7300, 7350, 7400, 7450, 7500, 7550, 7600, 7650, 7700, 7750, 7800, 7850, 7900, 7950, 8000, 8050, 8100, 8150, 8200, 8250, 8300, 8350, 8400, 8450, 8500, 8550, 8600, 8650, 8700, 8750, 8800, 8850, 8900, 8950, 9000, 9050, 9100, 9150, 9200, 9250, 9300, 9350, 9400, 9450, 9500, 9550, 9600, 9650, 9700, 9750, 9800, 9850, 9900, 9950, 10000, 10050, 10100, 10150, 10200, 10250, 10300, 10350, 10400, 10450, 10500, 10550, 10600, 10650, 10700, 10750, 10800, 10850, 10900, 10950, 11000, 11050, 11100, 11150, 11200, 11250, 11300, 11350, 11400, 11450, 11500, 11550, 11600, 11650, 11700, 11750, 11800, 11850, 11900, 11950, 12000, 12050, 12100, 12150, 12200, 12250, 12300, 12350, 12400, 12450, 12500, 12550, 12600, 12650, 12700, 12750, 12800, 12850, 12900, 12950, 13000, 13050, 13100, 13150, 13200, 13250, 13300, 13350, 13400, 13450, 13500, 13550, 13600, 13650, 13700, 13750, 13800, 13850, 13900, 13950, 14000, 14050, 14100, 14150, 14200, 14250, 14300, 14350, 14400, 14450, 14500, 14550, 14600, 14650, 14700, 14750, 14800, 14850, 14900, 14950, 15000, 15050, 15100, 15150, 15200, 15250, 15300, 15350, 15400, 15450, 15500, 15550, 15600, 15650, 15700, 15750, 15800, 15850, 15900, 15950, 16000, 16050, 16100, 16150, 16200, 16250, 16300, 16350, 16400, 16450, 16500, 16550, 16600, 16650, 16700, 16750, 16800, 16850, 16900, 16950, 17000, 17050, 17100, 17150, 17200, 17250, 17300, 17350, 17400, 17450, 17500, 17550, 17600, 17650, 17700, 17750, 17800, 17850, 17900, 17950, 18000, 18050, 18100, 18150, 18200, 18250, 18300, 18350, 18400, 18450, 18500, 18550, 18600, 18650, 18700, 18750, 18800, 18850, 18900, 18950, 19000, 19050, 19100, 19150, 19200, 19250, 19300, 19350, 19400, 19450, 19500, 19550, 19600, 19650, 19700, 19750, 19800, 19850, 19900, 19950, 20000, 20050, 20100, 20150, 20200, 20250, 20300, 20350, 20400, 20450, 20500, 20550, 20600, 20650, 20700, 20750, 20800, 20850, 20900, 20950, 21000, 21050, 21100, 21150, 21200, 21250, 21300, 21350, 21400, 21450, 21500, 21550, 21600, 21650, 21700, 21750, 21800, 21850, 21900, 21950, 22000, 22050, 22100, 22150, 22200, 22250, 22300, 22350, 22400, 22450, 22500, 22550, 22600, 22650, 22700, 22750, 22800, 22850, 22900, 22950, 23000, 23050, 23100, 23150, 23200, 23250, 23300, 23350, 23400, 23450, 23500, 23550, 23600, 23650, 23700, 23750, 23800, 23850, 23900, 23950, 24000, 24050, 24100, 24150, 24200, 24250, 24300, 24350, 24400, 24450, 24500, 24550, 24600, 24650, 24700, 24750, 24800, 24850, 24900, 24950, 25000, 25050, 25100, 25150, 25200, 25250, 25300, 25350, 25400, 25450, 25500, 25550, 25600, 25650, 25700, 25750, 25800, 25850, 25900, 25950, 26000, 26050, 26100, 26150, 26200, 26250, 26300, 26350, 26400, 26450, 26500, 26550, 26600, 26650, 26700, 26750, 26800, 26850, 26900, 26950, 27000, 27050, 27100, 27150, 27200, 27250, 27300, 27350, 27400, 27450, 27500, 27550, 27600, 27650, 27700, 27750, 27800, 27850, 27900, 27950, 28000, 28050, 28100, 28150, 28200, 28250, 28300, 28350, 28400, 28450, 28500, 28550, 28600, 28650, 28700, 28750, 28800, 28850, 28900, 28950, 29000, 29050, 29100, 29150, 29200, 29250, 29300, 29350, 29400, 29450, 29500, 29550, 29600, 29650, 29700, 29750, 29800, 29850, 29900, 29950, 30000, 30050, 30100, 30150, 30200, 30250, 30300, 30350, 30400, 30450, 30500, 30550, 30600, 30650, 30700, 30750, 3

• **Seattle:** Alaska, Washington, Oregon,

	NEW ENGLAND	MIDDLE ATLANTIC	SOUTH ATLANTIC	NORTH CENTRAL	SOUTH CENTRAL	MOUNTAIN	PACIFIC
	598,228	594,357	594,869	594,357	597,323	593,391	598,57
	598,228	593,54	593,588	594,353	598,591	598,594	593,598
	598,579	595,548	597,234	592,455	598,900	577,371	598,591
	598,28	592,669	598,728	598,822	598,575	592,598	598,598
	598,231	598,768	591,679	597,025	597,894	592,598	598,598
	592,18	598,357	593,59	592,594	578,232	578,59	598,598
	591,598	548,882	593,588	544,857	543,795	544,787	598,594
	574,679	574,594	574,449	572,525	598,32	598,598	598,597
	544,029	598,598	598,579	598,582	598,571	545,676	598,579
	573,59	574,798	574,591	594,398	598,598	598,232	578,598
	573,107	567,854	567,898	594,567	598,567	563,594	598,594
	593,215	593,272	576,494	576,598	598,798	575,542*	598,572
	598,598	598,567	591,679	598,598	594,492	597,493	598,595
	579,334	571,598	593,583	593,218	598,257	571,567	598,591
	578,547*	592,479	598,594	594,882	592,582	598,567	598,798
	575,838	594,598	591,598	578,429	594,882	591,594*	598,598
	591,464	594,598	598,598	594,154	593,493	591,521	594,597

* The total hours for this job title in this particular region are lower than 24 because not everyone who works there does this specific occupation, only.



MONEY MATTERS

Which factors would most influence you to change your job?

Salary increase	10
Better work/life balance	9
More vacation time	8
Access to new technology projects	16
Large sign-on bonus	13
More responsibility	12
More training	11
New title	14
Relocation	7
Paid moving expenses	10
Complete career change	15
Other factor	



What matters most to you about your job?

Basic pay	10
Stock options	9
Potential for career advancement and development	16
Vacation time/paid time off	13
Skills development/educational training opportunities	12
Job stability	20
Flexible work schedule/telecommuting/working at home	26
Working with leading edge technology	20
My opinion and knowledge is valued	10
Benefits	18
Corporate commitment to understanding of the importance of IT	15
Recognition for work well done	14

Source: Computerworld's 2005 Salary Survey

PAUL GLEN

The Meaning Of Money

VER THE PAST DECADE, industry salaries have been on a roller-coaster ride. This year's survey data shows a return to level ground, which makes this a good time to re-evaluate how we think about money. It seems our love affair with lucre has developed into a bit of a dysfunctional relationship.

Now don't get me wrong. I like money as much as the next person — and more is better — but I'm concerned that we may have created some misconceptions about its meaning.

As a manager and consultant, I have noticed that few issues elicit as much emotion from technical staffs as salary. For a bunch of folks who typically eschew emotion, we can get really worked up about money. I've seen more tears and screaming about it than about any other managerial issue.

It's not that we're starving. Few fully employed people in the IT industry are filing for food stamps or could qualify as the working poor. And this year, with 3% pay increases, the news is not too bad. So what's it all about?

The problem is that we've allowed money to become wrapped up with a number of other issues. We use it as a tangible symbol for other intangible values.

Status. We use money as an indicator of social status. As hard animals, we really like to know where we stand in relation to our peers, and money is one key measure.

Personal worth. We use money as a symbol of how much our organizations value us. The more they pay us, the more they must feel that we are good and valuable people.

Progress. We expect that income over a career should continually rise. As we progress, so should our value, and commensurate compensation.

Fairness. Most important, we use money as a gauge of the organization's fairness. We compare the value we deliver and expect to be reasonably compensated. We estimate the value that we add compared with our peers and expect that each should be compensated according to his relative contribution.

So frequently, when technical people, uncomfortable with arguably emotional things, feel underpaid, unloved, abused or unfairly treated, they complain about money. It's the safe, concrete way to express what they don't like. It's easy to say, "Bob does a worse job than I do but is paid better. That's not fair." It's hard to say, "Why don't you respect me and my



contribution as much as you do Bob?" But they are really the same thing.

And that's where the problem comes in. Money's not really about any of those things.

In aggregate, how much we get paid is not a function of our moral worth but of supply and demand. The ups and downs of salary numbers are based less on the value we deliver to the organization and more on the fluctuations of the market for people with our talents.

During the boom years of the '90s, I hired young college graduates at salaries in excess of twice the average income for a family of four in the U.S. When they asked me for career advice, I'd always tell them the same thing: "Save your money." And they would look at me as if I were speaking a foreign language.

"You don't get paid this much because you're morally superior to the janitor. It's just a matter of supply and demand, and at some point, things will change. Don't build a lifestyle around the assumption that you will always make more. In fact, if you think about it, if the company had to lose one person, a young programmer or the janitor, whom do you think we'd miss first?"

As the market for technical skills continues to globalize, we need to get clear about what money really means. And perhaps more important, we need to get better at expressing our feelings about worth and values and fairness separately from the symbol to which we've grown so accustomed.

© 57642

MONEY MATTERS

Which factors would most influence you to change your job?

Salary increase	81%
Better work/life balance	45%
More vacation time	36%
Access to new technology projects	36%
Large sign-on bonus	35%
More responsibility	34%
More training	28%
New title	17%
Relocation	17%
Paid training expenses	16%
Complete career change	16%
Other factor	8%



What matters most to you about your job?

Base pay	52%
Stock options	44%
Potential for career advancement and development	37%
Vacation time/used time off	33%
Skills development/educational training opportunities	30%
Job stability	28%
Flexible work schedule/telecommuting/working at home	26%
Working with leading-edge technology	26%
My current and knowledge is valued	19%
Benefits	16%
Corporate commitment to and understanding of the importance of IT	16%
Recognition for work well done	14%

Source: Computerworld's 2005 Salary Survey

PAUL GLEN

The Meaning Of Money

OVER THE PAST DECADE, industry salaries have been on a roller-coaster ride. This year's survey data shows a return to level ground, which makes this a good time to re-evaluate how we think about money. It seems our love affair with lucre has developed into a bit of a dysfunctional relationship.

Now don't get me wrong. I like money as much as the next person — and more is better — but I'm concerned that we may have created some misconceptions about its meaning.

As a manager and consultant, I have noticed that few issues elicit as much emotion from technical staffs as salary. For a bunch of folks who typically eschew emotion, we can get really worked up about money. I've seen more tears and screaming about it than about any other managerial issue.

It's not that we're starving. Few fully employed people in the IT industry are filing for food stamps or could qualify as the working poor. And this year, with 3% pay increases, the news is not too bad. So what's it all about?

The problem is that we've allowed money to become wrapped up with a number of other issues. We use it as a tangible symbol for other intangible values.

Status. We use money as an indicator of social status. As herd animals, we really like to know where we stand in relation to our peers, and money is one key measure.

Personal worth. We use money as a symbol of how much our organizations value us. The more they pay us, the more they must feel that we are good and valuable people.

Progress. We expect that income over a career should continually rise. As we progress, so should our value and commensurate compensation.

Fairness. Most important, we use money as a gauge of the organization's fairness. We compare the value we deliver and expect to be reasonably compensated. We estimate the value that we add compared with our peers and expect that each should be compensated according to his relative contribution.

So frequently, when technical people, uncomfortable with squishy emotional things, feel undervalued, unloved, abused or unfairly treated, they complain about money. It's the safe, concrete way to express what they don't like. It's easy to say, "Bob does a worse job than I do but is paid better. That's not fair." It's hard to say, "Why don't you respect me and my

contribution as much as you do Bob's?" But they are really the same thing.

And that's where the problem comes in. Money's not really about any of those things.

In aggregate, how much we get paid is not a function of our moral worth but of supply and demand. The ups and downs of salary numbers are based less on the value we deliver to the organization and more on the fluctuations of the market for people with our talents.


During the boom years of the '90s, I hired young college graduates at salaries in excess of twice the average income for a family of four in the U.S. When they asked me for career advice, I'd always tell them the same thing: "Save your money." And they would look at me

as if I were speaking a foreign language.

"You don't get paid this much because you're morally superior to the janitor. It's just a matter of supply and demand, and at some point, things will change. Don't build a lifestyle around the assumption that you will always make more. In fact, if you think about it, if the company had to lose one person, a young programmer, or the janitor, whom do you think we'd miss first?"

As the market for technical skills continues to globalize, we need to get clear about what money really means. And perhaps more important, we need to get better at expressing our feelings about worth and values and fairness separately from the symbol to which we've grown so accustomed.

© 1994



DON'T LET SPYWARE SABOTAGE YOUR ENTERPRISE.

The next threat is no threat with Trend Micro.

Expose and eradicate spyware with Trend Micro's Enterprise-class, multi-level, anti-spyware solutions. They're the only solutions that block and clean at the gateway—the most effective point of control. Trend Micro, #1 global leader at the gateway and industry pioneer. Whether it's a virus, worm, spyware, or spam, we've got you covered.

For a FREE evaluation and IDC whitepaper,
go to www.trendmicro.com/spyware



©2004 Trend Micro, Inc. All rights reserved. Trend Micro and the Trend Micro logo are trademarks or registered trademarks of Trend Micro, Inc. All other product names herein are trademarks or registered trademarks of their owners.



COMPUTERWORLD SALARY SURVEY 2005

SENIOR MANAGEMENT POSITIONS					MIDDLE MANAGEMENT POSITIONS			
CEO/Vice president of IT	Chief technology officer	Director of systems development	Director of IT operations	Internet technology strategist	Computer operations manager	Help desk/tech support manager	Information security manager	IT manager
3.3%	0.1%	2.7%	2.8%	2.2%	2.4%	3.3%	3.6%	3.1%
Average salary	Average salary	Average salary	Average salary	Average salary	Average salary	Average salary	Average salary	Average salary
\$194,405	\$129,334	\$123,292	\$95,366	\$100,867	\$76,002	\$63,640	\$69,384	\$78,453
Bonus	Bonus	Bonus	Bonus	Bonus	Bonus	Bonus	Bonus	Bonus
\$30,017	\$25,305	\$19,266	\$12,661	\$11,159	\$4,903	\$4,397	\$0,364	\$6,931
Total	Total	Total	Total	Total	Total	Total	Total	Total
\$164,422	\$154,639	\$142,558	\$108,227	\$112,026	\$82,805	\$68,037	\$69,748	\$85,384
Average total compensation by industry	Average total compensation by industry	Average total compensation by industry	Average total compensation by industry	Average total compensation by industry	Average total compensation by industry	Average total compensation by industry	Average total compensation by industry	Average total compensation by industry
\$159,096	\$154,460	\$138,845	\$105,14	\$9,51	\$80,842	\$65,878	\$95,143	\$12,834
Average total compensation by industry					Average total compensation by industry			
Health care	56.0	7.7	72.4		61.6	\$51,560	\$100.1	\$85,213
Information technology	331	175.73			73.04	\$71,963	\$91,609	\$73,214
Finance	4	42.99	4		\$61,673	\$68,329	\$81,995	\$80,685
Manufacturing	4.4				\$88,327	61.45	\$82,525	\$82,553
Government		4				\$65,126	\$116,740	\$102,462
Education	47		4			\$94,680		\$91,927
Energy						\$74,315		\$98,343
Telecommunications								\$96,566
Transportation								\$10,1
Other	1.4	4	3		\$66,230	\$61,707		\$69,442
Unlabeled	74	139.3	1	4		\$69,768	\$94,830	\$84,224
Unlabeled	4	\$8,38	4		4	\$80,517	\$104,081	\$102,641
Unlabeled		107.7	1.4		\$119,819			\$118,639

A SAMPLING OF OTHER JOB TITLES

Chief security officer	Director of network	Communications manager	Database manager	Data warehousing manager	E-commerce manager	Internet/intranet manager	Communications specialist	Computer operator/head operator
0%	2.5%	2.7%	2.8%	2.2%	1%	2.8%	2.8%	4.4%

GROWTH INDUSTRIES

Largest increases in total compensation, by industry:

Food/beverages


4.2%

Business services

4.1%

Defense/aerospace

Biotechnology/pharmaceutical



CA software manages

over 4 billion

transactions per day for the world's busiest public agency.

At peak workloads, that's 51,448 transactions per second executed without a glitch when CA software automates systems and processes. If your enterprise needs to manage critical business transactions across platforms, around the world, with this kind of speed and reliability, call a CA representative at 1-888-423-1000 or visit ca.com/didyouknow.

Simplify
Automate
Secure



Computer Associates®

MIDDLE MANAGEMENT POSITIONS

Network architect	Product manager	Application development manager	Project manager
3 1/2%	2 7/8%	3 1/2%	2 4/8%
Average salary	Average salary	Average salary	Average salary
\$66,891	\$68,491	\$63,029	\$68,829
Bonus	Bonus	Bonus	Bonus
\$2,691	\$80,995	\$7,892	\$8,991
Total	Total	Total	Total
\$69,582	\$69,596	\$70,921	\$77,820
2004 total	2004 total	2004 total	2004 total
\$68,214	\$68,984	\$67,776	\$82,730

AVERAGE TOTAL COMPENSATION BY INDUSTRY

Education	Computer services/consulting	Computer services/consulting	Computer services/consulting
\$58,983	\$67,542	\$67,542	\$67,542
Government	Manufacturing (noncomputer)	Manufacturing (noncomputer)	Manufacturing (noncomputer)
\$69,836	\$17,238	\$69,836	\$69,836
Manufacturing (noncomputer)	Health care	Health care	Health care
\$75,616	\$81,900	\$81,900	\$81,900
Health care	Health care	Health care	Health care
\$71,893	Health care	Health care	Health care
Legal/insurance/real estate	Finance/insurance/real estate	Finance/insurance/real estate	Finance/insurance/real estate
\$67,932	\$104,253	\$104,253	\$104,253
	Legal/insurance/real estate	Legal/insurance/real estate	Legal/insurance/real estate
	\$69,810	\$69,810	\$69,810
	Manufacturing (noncomputer)	Manufacturing (noncomputer)	Manufacturing (noncomputer)
	\$96,841	\$96,841	\$96,841
	Banking	Banking	Banking
	\$105,749	\$105,749	\$105,749
	Telecommunications	Telecommunications	Telecommunications
	\$104,594	\$104,594	\$104,594

AVERAGE TOTAL COMPENSATION BY COMPANY REVENUE

Less than \$50M	Less than \$50M	Less than \$50M	Less than \$50M
\$58,467	\$68,391	\$68,007	\$64,238
\$50M to \$99.9M	\$50M to \$99.9M	\$50M to \$99.9M	\$50M to \$99.9M
\$71,082	\$101,220	\$98,441	\$82,887
\$100 to \$499	\$100 to \$499	\$100 to \$499	\$100 to \$499
\$64,476	\$102,938	\$108,454	\$97,391
More than \$500M	More than \$500M	More than \$500M	More than \$500M
\$63,347	\$108,252	\$114,691	\$104,918

* Average percentage increase, 2004-2005

Gray field: The base salary for the job in the particular industry or company was less than \$10,000. These figures should be used for comparison only because they don't constitute a statistically significant sampling.

STAFF AND ENTRY-LEVEL POSITIONS

Database administrator	Help desk/troubleshoot specialist	Information security specialist	Technology/business analyst	Network administrator	Network engineer	Programmer/analyst
1 1/8%	2%	4 2/8%	2 8/8%	3%	2 2/8%	2 1/8%
Average salary	Average salary	Average salary	Average salary	Average salary	Average salary	Average salary
\$77,834	\$46,569	\$74,645	\$69,141	\$61,681	\$67,124	\$64,709
Bonus	Bonus	Bonus	Bonus	Bonus	Bonus	Bonus
\$4,717	\$1,864	\$6,390	\$4,804	\$2,603	\$3,241	\$2,977
Total	Total	Total	Total	Total	Total	Total
\$82,551	\$48,433	\$81,035	\$73,945	\$64,284	\$70,365	\$67,686
2004 total	2004 total	2004 total	2004 total	2004 total	2004 total	2004 total
\$81,152	\$47,464	\$77,767	\$71,949	\$62,712	\$68,830	\$66,068

AVERAGE TOTAL COMPENSATION BY INDUSTRY

Computer services/consulting	Government services/consulting	Computer services/consulting	Computer services/consulting	Manufacturing (noncomputer)	Computer services/consulting	Legal/insurance/real estate
\$50,357	\$56,896	\$52,870	\$52,870	\$52,690	\$52,690	\$52,690
Government	Computer services/consulting	Government	Manufacturing (noncomputer)	Government	Government	Government
\$70,026	\$48,815	\$76,992	\$74,217	\$57,207	\$75,815	\$63,296
Manufacturing (noncomputer)	Education	Banking	Health care	Health care	Health care	Health care
\$73,739	\$39,003	\$73,761	\$67,456	\$53,340	\$67,959	\$67,236
Legal/insurance/real estate	Manufacturing (noncomputer)	Finance/insurance/real estate	Legal/insurance/real estate	Health care	Health care	Health care
\$85,282	\$45,860	\$92,370	\$53,065	\$70,044	\$66,499	\$66,499
Health care	Legal/insurance/real estate	Legal/insurance/real estate	Health care	Computer services/consulting	Manufacturing (noncomputer)	Health care
\$85,687	\$53,493	\$75,517	\$64,051	\$56,055	\$68,061	\$62,801
Education	Health care	Defense/aerospace	\$104,210	Legal/insurance/real estate	Education	Education
\$60,374	\$39,863	Health care	\$104,210	\$59,353	\$54,434	\$83,896
Finance/insurance/real estate	Manufacturing (noncomputer)	Health care	\$64,960	Health care	Defense/aerospace	Banking
\$103,267	\$71,608	Banking	\$71,916	\$47,402	\$61,771	\$67,775
					\$75,333	\$76,619
						\$76,619

AVERAGE TOTAL COMPENSATION BY COMPANY REVENUE

Less than \$50M	Less than \$50M	Less than \$50M	Less than \$50M	Less than \$50M	Less than \$50M	Less than \$50M
\$58,294	\$41,399	\$70,080	\$60,409	\$50,764	\$64,243	\$60,862
\$50M to \$99.9M	\$50M to \$99.9M	\$50M to \$99.9M	\$50M to \$99.9M	\$50M to \$99.9M	\$50M to \$99.9M	\$50M to \$99.9M
\$64,563	\$48,276	\$64,276	\$64,276	\$64,276	\$64,276	\$64,276
\$100 to \$499	\$100 to \$499	\$100 to \$499	\$100 to \$499	\$100 to \$499	\$100 to \$499	\$100 to \$499
\$80,714	\$58,625	\$80,456	\$80,456	\$80,456	\$80,456	\$80,456
More than \$500M	More than \$500M	More than \$500M	More than \$500M	More than \$500M	More than \$500M	More than \$500M
\$82,355	\$62,887	\$82,241	\$86,527	\$96,617	\$74,838	\$77,800

Charts continue on page 52

A SAMPLING OF OTHER JOB TITLES

Database analyst	Database architect	Database developer	Financial analyst	Financial controller	Network administrator	Systems administrator	Webmaster
2 1/8%	2 6/8%	0%	2 6/8%	2 5/8%	0%	2 7/8%	3 3/8%
Average salary	Average salary	Average salary	Average salary	Average salary	Average salary	Average salary	Average salary
\$60,000	\$84,939	\$74,167	\$71,281	\$74,256	\$86,039	\$86,942	\$53,698
Bonus	Bonus	Bonus	Bonus	Bonus	Bonus	Bonus	Bonus
\$6,952	\$11,557	\$6,457	\$7,629	\$8,036	\$8,181	\$4,608	\$1,723
Total	Total	Total	Total	Total	Total	Total	Total
\$66,952	\$106,496	\$80,624	\$78,910	\$82,292	\$94,220	\$91,550	\$55,421
2004 total	2004 total	2004 total	2004 total	2004 total	2004 total	2004 total	2004 total
\$64,767	\$103,785	\$80,457	\$76,208	\$80,251	\$91,880	\$89,156	\$55,402

SLOW INDUSTRIES

Smallest increases in total compensation, by industry.

Telecommunications	2%
IT/computer-related services	1.9%
Computer dealer/retailer	1.9%
Mining/agriculture/construction/engineering	1.8%

AVERAGE TOTAL COMPENSATION BY COMPANY REVENUE			
Lowest 25%	Lowest 50%	Lowest 75%	Lowest 90%
\$60,000	\$64,830	\$74,167	\$71,281
\$66,052	\$71,557	\$84,457	\$78,910
\$66,112	\$100,490	\$80,844	\$82,292
\$66,107	\$100,490	\$80,844	\$82,292

AVERAGE TOTAL COMPENSATION BY COMPANY REVENUE			
Lowest 25%	Lowest 50%	Lowest 75%	Lowest 90%
\$60,000	\$64,830	\$74,167	\$71,281
\$66,052	\$71,557	\$84,457	\$78,910
\$66,112	\$100,490	\$80,844	\$82,292
\$66,107	\$100,490	\$80,844	\$82,292

AVERAGE TOTAL COMPENSATION BY COMPANY REVENUE			
Lowest 25%	Lowest 50%	Lowest 75%	Lowest 90%
\$60,000	\$64,830	\$74,167	\$71,281
\$66,052	\$71,557	\$84,457	\$78,910
\$66,112	\$100,490	\$80,844	\$82,292
\$66,107	\$100,490	\$80,844	\$82,292

*No Average percentage increase, 2004-2005

Gray Mark: The total base for this job title in this particular industry or company size was lower than 10 responses but more than 15. These figures should be used for comparison only, because they don't constitute a statistically significant sampling.

*The total base for this job title in this particular industry or company size was lower than 10 responses but more than 15. These figures should be used for comparison only.

Charts continue on page 52

STAFF AND ENTRY-LEVEL POSITIONS

Database administrator	Help desk/tech support specialist	Information security specialist	Technology/business analyst	Network administrator	Network engineer	Programmer/analogist
17%	2%	42%	20%	3%	22%	24%
Average salary \$77,854	Average salary \$45,558	Average salary \$74,648	Average salary \$69,736	Average salary \$61,096	Average salary \$67,254	Average salary \$64,709
Base \$4,717	Base \$3,884	Base \$8,390	Base \$4,804	Base \$3,606	Base \$3,541	Base \$3,977
Total \$82,571	Total \$49,442	Total \$83,038	Total \$74,540	Total \$64,702	Total \$70,795	Total \$68,686
2004 total \$81,352	2004 total \$47,464	2004 total \$77,767	2004 total \$71,948	2004 total \$62,712	2004 total \$68,830	2004 total \$66,088

AVERAGE TOTAL COMPENSATION BY INDUSTRY

Computer services/consulting	Government	Computer services/consulting	Computer services/consulting	Manufacturing (noncomputer)	Computer services/consulting	Logistics/warehousing
\$82,000	\$50,357	\$82,000	\$82,000	\$82,000	\$82,000	\$82,000
\$70,626	\$48,815	\$70,626	\$70,626	\$70,626	\$70,626	\$70,626
\$75,730	\$38,003	\$75,730	\$75,730	\$75,730	\$75,730	\$75,730
\$85,262	\$45,860	\$85,262	\$85,262	\$85,262	\$85,262	\$85,262
\$85,867	\$53,483	\$85,867	\$85,867	\$85,867	\$85,867	\$85,867
\$80,474	\$38,863	\$80,474	\$80,474	\$80,474	\$80,474	\$80,474
\$80,267	\$71,608	\$80,267	\$80,267	\$80,267	\$80,267	\$80,267

AVERAGE TOTAL COMPENSATION BY COMPANY REVENUE

Lowest 25%	Lowest 50%	Lowest 75%	Lowest 90%	Lowest 25%	Lowest 50%	Lowest 75%	Lowest 90%
\$60,000	\$64,830	\$74,167	\$71,281	\$60,000	\$64,830	\$74,167	\$71,281
\$66,052	\$71,557	\$84,457	\$78,910	\$66,052	\$71,557	\$84,457	\$78,910
\$66,112	\$100,490	\$80,844	\$82,292	\$66,112	\$100,490	\$80,844	\$82,292
\$66,107	\$100,490	\$80,844	\$82,292	\$66,107	\$100,490	\$80,844	\$82,292

SLOW INDUSTRIES

Slowest increases in total compensation, by industry:

Information services	2%
Health care-related services	1.9%
Manufacturing	1.9%
Logistics/warehousing	1.8%

Innovations by InterSystems



Rapid development with robust objects



Lightning speed with a multidimensional engine



Easy database administration



Massive scalability on minimal hardware

The Objects Of Your Desire.

Caché is the first multidimensional database for transaction processing and real-time analytics. Its post-relational technology combines robust objects and robust SQL, thus eliminating object-relational mapping. It delivers massive scalability on minimal hardware, requires little administration, and incorporates a rapid application development environment.

These innovations mean faster time-to-market, lower cost of operations, and higher application performance. We back these claims with this money-back guarantee: *Buy Caché for new application development, and for up to one year you can return the license for a full refund if you are unhappy for any reason.** Caché is available for Unix, Linux, Windows, Mac OS X, and OpenVMS – and it's deployed on more than 100,000 systems ranging from two to over 50,000 users. We are InterSystems, a global software company with a track record of innovation for more than 25 years.

InterSystems
CACHÉ

Try an innovative database for free: Download a fully functional, non-expiring copy of Caché, or request it on CD, at www.InterSystems.com/Cache17A

* Read about our money-back guarantee in the full page White Paper.
© 2006 InterSystems Corporation. All rights reserved. InterSystems Caché is a registered trademark of InterSystems Corporation. All other trademarks are the property of their respective owners.

COMPUTERWORLD

SALARY SURVEY

2005

STAFF AND ENTRY-LEVEL POSITIONS

Project leader	Software developer	Software engineer	Systems administrator	Systems architect	Systems programmer	Systems analyst	Senior systems analyst	Technician	Web developer
3.5%	2.8%	3.3%	2.7%	2.8%	3.2%	2.7%	1.9%	2.8%	2.5%
Average salary \$76,519	Average salary \$72,636	Average salary \$70,833	Average salary \$62,506	Average salary \$93,242	Average salary \$78,925	Average salary \$60,986	Average salary \$77,430	Average salary \$43,283	Average salary \$57,017
Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
\$6,882	\$5,082	\$4,332	\$3,174	\$8,439	\$8,577	\$3,607	\$4,075	\$3,805	\$4,061
Total	Total	Total	Total	Total	Total	Total	Total	Total	Total
\$83,401	\$77,720	\$83,165	\$65,780	\$101,681	\$88,502	\$64,593	\$81,505	\$47,088	\$61,078
2004 total	2004 total	2004 total	2004 total	2004 total	2004 total	2004 total	2004 total	2004 total	2004 total
\$80,551	\$75,733	\$80,519	\$64,055	\$98,868	\$82,956	\$62,879	\$79,951	\$45,787	\$58,906

AVERAGE TOTAL COMPENSATION BY INDUSTRY

Computer services/consulting	Computer services/consulting	Computer services/consulting	Manufacturing (noncomputer)	Computer services/consulting	Legal/insurance/real estate	Health care (noncomputer)	Manufacturing (noncomputer)	Education	Computer services/consulting
\$80,498	\$65,983	\$61,636	\$64,865	\$100,209	\$87,588	\$79,957	\$66,249	\$37,210	\$43,646
Manufacturing (noncomputer)	Legal/insurance/real estate	Defense/aerospace	Education	Telecommunications	Computer services/consulting	Computer services/consulting	Health care (noncomputer)	Government	Health care (noncomputer)
\$71,777	\$73,449	\$54,917	\$50,204	\$94,617	\$66,064	\$62,687	\$53,308	\$62,121	\$55,957
Legal/insurance/real estate	Manufacturing (noncomputer)	Manufacturing (computer)	Computer services/consulting	Defense/aerospace	Health care (noncomputer)	Government	Health care (noncomputer)	Government	Health care (noncomputer)
\$97,056	\$95,454	\$94,315	\$72,987	\$111,696	\$87,283	\$72,792	\$74,553	\$64,824	\$55,957
Government	Financial/accounting	Insurance/real estate	Government	Education	Government	Government	Legal/insurance/real estate	Manufacturing (noncomputer)	Manufacturing (noncomputer)
\$73,409	\$88,685	\$89,605	\$67,595	\$122,284	\$71,030	\$81,454	\$77,869	\$46,624	\$60,367
Defense/aerospace*	Health care (noncomputer)	Manufacturing (noncomputer)	Health care (noncomputer)	Legal/insurance/real estate	Computer services/consulting	Computer services/consulting	Health care (noncomputer)	Health care (noncomputer)	Health care (noncomputer)
\$94,331	\$74,896	\$79,169	\$68,412	\$98,213	\$66,435	\$79,853	\$55,010	\$76,124	\$76,124
Finance/accounting	Manufacturing (noncomputer)	Legal/insurance/real estate	Legal/insurance/real estate	Bar/restaurant	Education	Health care (noncomputer)	Health care (noncomputer)	Health care (noncomputer)	Health care (noncomputer)
\$89,703	\$69,447	\$80,205	\$70,564	\$97,427	\$53,667	\$78,056	\$78,056	\$78,056	\$78,056
Manufacturing (computer)*	Government*	Finance/accounting	Finance/accounting	Finance/accounting	Finance/accounting	Finance/accounting	Finance/accounting	Finance/accounting	Finance/accounting
\$99,633	\$73,309	\$84,602	\$56,492	\$100,977	\$71,056	\$89,342	\$89,342	\$89,342	\$89,342
					Government*	Government*	Government*	Government*	Government*
					\$76,756	\$80,300	\$80,300	\$80,300	\$80,300

AVERAGE TOTAL COMPENSATION BY COMPANY REVENUE

Less than \$20M	Less than \$20M	Less than \$20M	Less than \$20M	Less than \$20M	Less than \$20M	Less than \$20M	Less than \$20M	Less than \$20M	Less than \$20M
\$73,807	\$68,711	\$61,535	\$58,497	\$68,292	\$77,312	\$58,170	\$71,074	\$43,353	\$51,976
\$20M to \$99.9M	\$20M to \$99.9M	\$20M to \$99.9M	\$20M to \$99.9M	\$20M to \$99.9M	\$20M to \$99.9M	\$20M to \$99.9M	\$20M to \$99.9M	\$20M to \$99.9M	\$20M to \$99.9M
\$76,150	\$76,150	\$81,846	\$66,726	\$90,381	\$80,545	\$81,453	\$44,935	\$64,308	\$64,308
\$100 to \$199	\$100 to \$199	\$100 to \$199	\$100 to \$199	\$100 to \$199	\$100 to \$199	\$100 to \$199	\$100 to \$199	\$100 to \$199	\$100 to \$199
\$85,786	\$82,014	\$82,895	\$73,947	\$88,996	\$70,541	\$83,162	\$52,490	\$74,809	\$74,809
More than \$200	More than \$200	More than \$200	More than \$200	More than \$200	More than \$200	More than \$200	More than \$200	More than \$200	More than \$200
\$93,963	\$91,957	\$87,615	\$81,486	\$108,513	\$86,966	\$72,099	\$91,514	\$65,030	\$76,096

* No average percentage increase 2004-2005.

Gray text: The total base for this job title in the particular industry or company size was lower than 30 responses but more than 15. These figures should be used for comparison only because they don't constitute a statistically significant sampling.

* The total base for this job title in the particular industry or company size was lower than 10 responses but more than five. These figures should be used for comparison only.

Methodology

Computerworld's 10th Annual Salary Survey was administered via the Internet. Responses from both Computerworld print subscribers and visitors to Computerworld.com were included in the survey results.

The collection of survey data began May 3 and concluded June 30, 2005. A total of 15,988 people responded to the survey. Of those respondents, 14,253 were employed full or part time and were eligible to complete the entire survey.

At the 95% confidence level, the margin

of error for this sample size is less than +/-4 percentage point.

Respondents were asked to report the percentage change in their compensation for 2004 to 2005. Compensation figures for 2004 were calculated based on the percentage change reported by the respondents. ▶

ONLINE For a detailed look at how we conducted the survey, visit our Web site: QuickJob.Survey.com

WHO THEY ARE

Eighty-two percent of the respondents were men, 88% were employed full time, and 46% said a bachelor's degree was their highest level of education. The respondents had an average of 16 years in IT, and their average age was 42. Forty-three percent indicated that they had some level of certification.

Forty-nine percent of our respondents indicated that they were in management, and 59% said they

held staff or technical positions. Four percent said they were employed as contractors or consultants. The most self-represented industry was IT services, with 15% saying they worked in that field. Eighty-four percent reported that they held the same job last year.

More than 10% of the respondents said they reside in the South Atlantic U.S., and another 10% reported living in the Central U.S., making these geographic regions the best-represented.

COMPUTERWORLD
SALARY
SURVEY
2005

STAFF AND ENTRY-LEVEL POSITIONS

[illegible]

AVERAGE TOTAL COMPENSATION BY INDUSTRY

[illegible]

AVERAGE TOTAL COMPENSATION BY COMPANY REVENUE

[illegible]

* Average percentage increase, 2004-2006.

Gray text: The total base for this job title in this particular industry or company size was fewer than 30 responses but more than 15. These figures should be used for comparison only, because they don't constitute a statistically significant sample.

* The intelligence for this job title in this particular industry or company size was lower than 10 responses but more than nine. These figures should be used for comparison only.

Methodology

Computerworld's 15th Annual Salary Survey was administered via the Internet. Responses from both Computerworld print subscribers and visitors to Computerworld.com were included in the survey results.

The collection of survey data began July 3 and concluded June 30, 2005. A total of 1,000 people responded to the survey. Of those respondents, 14,253 were employed in the U.S. and were eligible to complete the survey.

level, the margin

of error for this sample size is less than ± 3 percentage point.

Respondents were asked to report the percentage change in total compensation for 2004 to 2005. The average percentage change for 2004 was 10.5%, and the average percentage change for 2005 was 11.5%.

held staff or technical positions. Four persons said they were employed as technicians or assistants. The most well-represented industry was IT services, with 10% saying they were in that industry. Eighty-four percent of the respondents said they held the same

ALAN H. "BUD" SELIG

by

SAS gives MLB comm

0000

0000



STILL FEELING THE PINCH

Respondents reported that in the past year, their working conditions have been significantly affected by:

Increased workload due to staff cuts	53%
Budget cuts	50%
Permanent staff layoffs	31%
Hiring freeze	30%
Salary freeze	27%
Training cuts	26%
Cancelled projects	24%
Increased outsourcing	24%
Contract staff layoffs	15%
Contract/consultant hires	12%
Increased hiring/staffing	10%
Decreased outsourcing	2%

SECURITY BLANKET

We asked respondents how secure they're feeling in their jobs:

Very secure	23%
Secure	34%
Level of job security hasn't changed from one year ago	57%
More secure than last year	22%
Less secure than last year	16%

Source: Computerworld's 2005 Salary Survey

JOHANNA ROTHMAN

Spark Your Salary

HERE'S SOME GOOD news in this year's salary survey. Salaries are up (a little), bonuses are up (a little) and the effects of layoffs, hiring freezes and outsourcing are all down — a little. And training budgets look as if they may be coming back a bit.

If you're like me, these small gains are something to be happy about. We're not back in the boom times of the late '90s, when, if you could spell

computer, you were qualified to be a developer or a tester or, even worse, a manager. And between the slight increases in hiring and training, and the decrease in layoffs, the current jobs may be more interesting to employees and more valuable to employers.

If you review the areas of greatest increases, you'll see that employers are paying more for people who know about security. Employers do pay more for people with a greater span of technical skills, and security (as well as performance and reliability) is a functional skill whose time has come. (And no, I have no idea how long this will last, but as long as we continue to gather ever more personal data, we will need more people to think about and implement good security.)

Some of you may be thinking, "Oh nuts, just a 3% raise. That's not much." You're right. That 3% is lagging the national average for the fourth year in a row. But here's a little perspective. According to Econdell.com, annual inflation rates in 2002, 2003 and 2004 were 1.6%, 2.3% and 2.7%, respectively. If you received a 3% raise for your 2004 work, you beat inflation. Not by much, but beating inflation is better than seeing your spending power decrease. And if you received a bonus, your wages did increase.

So my next question is, Are relatively flat salaries normal? The answer, of course, is, it depends. Salaries are dependent on people adding value to their companies to rev up innovation. And salaries are dependent on employers considering areas of innovation. Whenever you have innovation, salaries (eventually) rise. Salary increases across the industry are a lagging indicator of a disruptive change. Local salary increases are a lagging indicator of an organization performing well, relative to its competitors.

If you're doing the same old, same old, don't expect an increase in salary. Be more concerned that your organization will cut costs in some way.

And, of course, the size of salary increases isn't the only cause for concern in the survey results. Although people are feeling more secure in their jobs, I'm worried about the emotional cost of that feeling of security. More people are trying to do more work with fewer employees, something that's been going on for a few years. And even though the percentage of respondents who said they found their jobs stress-



ful was lower this year (47%) than it was last year (52%), that's still a lot of people feeling stressed.

If innovation is key to improved revenue, which is the key to higher salaries, people need time to think. And if they're trying to do the work of more than one person, they don't have the time.

Money is a funny thing when it comes to morale. If you're underpaid (compared with your organization and industry), your morale will suffer until you find a new job with a competitive salary. But if you feel you're paid fairly, money doesn't motivate you as much as it could. What does motivate people is the respect of their peers and their manager and a good relationship with their manager.

When I look at the percentages of respondents who said they were significantly affected by budget cuts (50%), layoffs (31%) and hiring freezes (30%), I see people who find it challenging to develop collegial relationships with peers and managers. That situation may make it difficult to appeal to people's intrinsic motivation to perform great work.

So I have some suggestions. Whether you're a manager or a technical contributor, take a long, hard look at your work. First, make sure all the hard work you do is required by the organization. Too often, we continue to perform work that's no longer needed—or at least no longer needed to be performed by us.

Second, ask yourself if you're doing work that's fundamentally the same work you did last year. If so, what kinds of additional technical skills would you need to acquire to change how you do the work? Work with your manager to develop an action plan to seek how to increase your technical skills so you can perform work of more value to the organization.

Third, remember that innovation arises from all of us. If you have an idea about how the work could be done better or an idea about a new project that could be undertaken, make sure you raise those ideas, no matter where you are in the organization.

The good news about the salary survey is that there's no bad news. It's up to us to move out of the doldrums in our organizations and create our new futures. Take a little time and think strategically about your work. You'll see how to work differently and create more value for the organization. Once you do, your salary will rise. And that will be great news. ☺ 50475



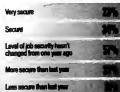
STILL FEELING THE PINCH

Dependents reported that in the past year, their working conditions have been significantly affected by:



SECURITY BLANKET

We asked respondents how secure they're feeling in their jobs:



Source: Computerworld's 2005 Salary Survey

JONANNA ROTHMAN

Spark Your Salary

THERE'S SOME GOOD news in this year's salary survey. Salaries are up (a little), bonuses are up (a little) and the effects of layoffs, hiring freezes and outsourcing are all down — a little. And training budgets look as if they may be coming back a bit.

If you're like me, these small gains are something to be happy about.

We're not back in the boom times of the late '90s, when, if you could spell

computer, you were qualified to be a developer or a tester or, even worse, a manager. And between the slight increases in hiring and training and the decrease in layoffs, the current jobs may be more interesting to employees and more valuable to employers.

If you review the areas of greatest increases, you'll see that employers are paying more for people who know about security. Employers do pay more for people with a greater span of technical skills, and security (as well as performance and reliability) is a functional skill whose time has come. (And no, I have no idea how long this will last, but as long as we continue to gather ever more personal data, we will need more people to think about and implement good security.)

Some of you may be thinking, "Oh nuts, just a 3% raise. That's not much." You're right. That 3% is lagging the national average for the fourth year in a row. But here's a little perspective. According to EconEdLink.org, annual inflation rates in 2002, 2003 and 2004 were 1.6%, 2.3% and 2.7%, respectively. If you received a 3% raise for your 2004 work, you beat inflation. Not by much, but beating inflation is better than seeing your spending power decrease. And if you received a bonus, your wages did increase.

So my next question is, Are relatively flat salaries normal? The answer, of course, is, It depends. Salaries are dependent on people adding value to their companies to rev up innovation. And salaries are dependent on employers considering areas of innovation. Whenever you have innovation, salaries (eventually) rise. Salary increases across the industry are a leading indicator of a disruptive change. Local salary increases are a leading indicator of an organization performing well, relative to its competitors.

If you're doing the same old, same old, don't expect an increase in salary. Be more concerned that your organization will cut costs in some way.

And, of course, the size of salary increases isn't the only cause for concern in the survey results. Although people are feeling more secure in their jobs, I'm worried about the emotional cost of that feeling of security. More people are trying to do more work with fewer employees, something that's been going on for a few years. And even though the percentage of respondents who said they found their jobs stress-

ful was lower this year (47%) than it was last year (52%), that's still a lot of people feeling stressed.

If innovation is key to improved revenue, which is the key to higher salaries, people need time to think. And if they're trying to do the work of more than one person, they don't have the time.

Money is a funny thing when it comes to morale. If you're underpaid (compared with your organization and industry), your morale will suffer until you find a new job with a competitive salary. But if you feel you're paid fairly, money doesn't motivate you as much as it could. What does motivate people is the respect of their peers and their manager and a good relationship with their manager.

When I look at the percentages of respondents who said they were significantly affected by budget cuts (50%), layoffs (31%) and hiring freezes (30%), I see people who find it challenging to develop collegial relationships with peers and managers. That situation may make it difficult to appeal to people's intrinsic motivation to perform great work.

So I have some suggestions. Whether you're a manager or a technical contributor, take a long, hard look at your work. First, make sure all the work you do is required by the organization. Too often, we continue to perform work that's no longer needed — or at least no longer needed to be performed by us.

Second, ask yourself if you're doing work that's fundamentally the same work you did last year. If so, what kinds of additional technical skills would you need to acquire to change how you do the work? Work with your manager to develop an action plan to see how to increase your technical skills so you can perform work of more value to the organization.

Third, remember that innovation arises from all of us. If you have an idea about how the work could be done better or an idea about a new project that could be undertaken, make sure you raise those ideas, no matter where you are in the organization.

The good news about the salary survey is that there's no bad news. It's up to us to move out of the doldrums in our organizations and create our new futures. Take a little time and think strategically about your work. You'll see how to work differently and create more value for the organization. Once you do, your salary will rise. And that will be great news. ☐ 57475

No more unidentified issues.

Zero in on the source of any SAN slowdown.



Dashboard delivers a visual snapshot of entire SAN fabric performance.

Welcome to a network tool so smart, it's almost unreal. NetWisdom. The intelligent SAN performance monitoring solution that keeps you one step ahead of trouble.

Instantly measure SAN performance against the baseline to verify you're meeting internal service objectives. The exclusive 'visual dashboard' displays real-time health of the entire fabric. And if your SAN stumbles, you can quickly identify and engage the vendor at fault, to drive swift problem resolution.

Understand. Identify. Resolve. Fast. With the NetWisdom SAN performance monitoring solution.

Get more details during a free webinar, "Improving SAN Performance and Uptime with NetWisdom." Sign up now at <http://finisarevents.webex.com>

Finisar



Backups. Snapshots. SRM. Compliance. D/R...

**Are your point products less
friendly than they look?**

CommVault software lets you deploy individual products or seamlessly integrate new ones at a fraction of the time, effort and money required by separate point solutions.

Learn more at commvault.com or call us at 732.870.4000.

CommVault®
Unified Data Management™

Computer Systems Manager
Direct offshore software eng.
teams in dev of software and
projects. Manage software de-
sign and dev for final delivery.
C/A Plan & monitor project
progress. Monitor & manage
info. Provide tech. guidance.
Funct increases travel req. (over
40% in CA or IL) exp. or
equiv. 2 yrs exp as a lead in
software exp projects and 1 yr
exp in leading software dev with
offshore teams and 1 yr exp in
Conf and Change Mgmt. Re-
sults/Unifd Process and Tech.
Skills: Windows, J2EE, Re-
source Configuration, SQL,
Systems PowerBuilder, Job Limi-
tation. Bellevue, WA. Send resume
to: reit@office.com. Also call Ray
Laurit USA, Inc. 126 Summit
Ave. Suite 104 Montclair, NJ
07042.

Code, test, implement,
correct data base for
security Req. Bachelor's
in Comp. Science
w/2 yrs. exp. or as a
Data process analyst.
Send resume to J.
Norman, Jaxon In-
vestments Ltd., 540
Frontage Rd., Ste.
3245, Northfield, IL
60093.


TECHNICIST SYSTEMS
INC., Springfield, MO Seeking a
Computer Support Specialist to
provide technical assistance to
computer systems users in per-
son, via telephone or from
remote location. Travel to client
office work stations to handle
troubleshooting and repair and
perform warranty services for
DELL, Compaq, Apple and third
vendors and their computers.
Requires Bachelor's degree in
Computer Engineering, Elec-
tronic Engineering or Commu-
nications Engineering. Send
Resume to: Human Resources,
Technicist Systems, Inc., 1125
S. Pinckney Place, Springfield,
MO 65804 job code: TSM046.

TECHNICIST SYSTEMS
INC. Irving, TX Seeking a Com-
puter Support Specialist to
provide technical assistance to
computer systems users in per-
son, via telephone or from
remote location. Travel to client
office work stations to handle
troubleshooting and repair and
perform warranty services for
DELL, Compaq, Apple and third
vendors and their computers.
Requires Bachelor's degree in
Computer Engineering, Elec-
tronic Engineering or Commu-
nications Engineering. Send
Resume to: Human Resources,
Technicist Systems, Inc., 1125
S. Pinckney Place, Springfield,
MO 65804 job code: TSM046.

TECHNICIST SYSTEMS
INC. Laguna Hills, CA Seeking a
Computer Support Specialist to
provide technical assistance to
computer systems users in per-
son, via telephone or from
remote location. Travel to client
office work stations to handle
troubleshooting and repair and
perform warranty services for
DELL, Compaq, Apple and third
vendors and their computers.
Requires Bachelor's degree in
Computer Engineering, Elec-
tronic Engineering or Commu-
nications Engineering. Send
Resume to: Human Resources,
Technicist Systems, Inc., 1125
S. Pinckney Place, Springfield,
MO 65804 job code: TSM046.


DATA. WIRELESS. NETWORK.

Yes, you're in the right neighborhood.



What can a company like State Farm® possibly offer in the way of I.T.? Just one of the nation's largest computer networks. The drive of a Fortune 25 company. And a wealth of I.T. opportunities. How do you like the neighborhood so far? We Live Where You Live!

LIKE A GOOD NEIGHBOR



STATE FARM IS THERE!

Providing Insurance and Financial Services

For more information, visit statefarm.com or email jobopenings@statefarm.com.

State Farm is a Home Office. Insurance®. It's an equal opportunity employer.

Database Administrator
AMAX Engineering Corp.
Fremont, CA
Ovp, test & implement
database. Resume fax
(510)497-4889 or email
hr@amax.com. EOE.

PROGRAMMER ANALYST
Needed w/2yrs exp to An-
alyse design & develop client/
server applic. using VB,
ASP, Oracle & SQL Server
on Windows, DOS & UNIX.
OS Analysis review & alter
programs using VB.net,
ASP.net, Java Script, HTML
& PHP. Mail resumes to:
BOC USA, Inc. 43 Steves
Lane, Monmouth Jct., NJ
08852. Job loc: Monmouth
Jct., NJ or in unpopulated
locations in the U.S.

Pacific Communications, Inc.
needs Database Administrator
to work in Orlando, FL. Create
and design computer data-
bases, test, and implement
the database applying knowl-
edge of enterprise database
management systems and
first, second and third normal
designs. Candidate
must have Bachelor's in
Management Information
Systems and 2 yrs. expe-
rience in job offered. Submit
resume to: Subramanian
has number (407) 363-0811.
Pud job code DA-01.

Descriptive Analyst, Insurance
and IT. Mostly Research and A
performance analysis of security
related marketing methods.
Candidate must have a
solid understanding of both client
study techniques & business
processes. Must have a
graduate degree in Marketing
or a related field. Must have
at least 5 years of experience
in the field. Must have a
strong background in data
analysis and report writing.
Send resume to: recruitment@statefarm.com,
1100 FL, NY, NY 10011.

Oracle Database Administrator
Fullerton, CA sought by West
Coastery C&I Systems, Inc. to
provide Oracle/Unix/HP-Unix
administration of both client &
high-availability production sys-
tems, assist to architecture of
a scalable, reliable, high pro-
duction system & help &
assist disaster recovery pro-
cesses. BS in Computer
Engg. minm. of 5 yrs. exp.
in Oracle/Unix/HP-Unix. Send
resume to: recruitment@statefarm.com,
westcoastery@statefarm.com.



COMPUTERWORLD

FRANK HAYES • FRANKLY SPEAKING

Free-Market Dance

WHO GETS TO LEAD? That's the big question in the ongoing dance between Microsoft and the state of Massachusetts. For those who have been blissfully unaware of the situation, it comes down to this: Massachusetts has decided that its official format for internal documents going forward will be OpenDocument, an XML standard from the OASIS consortium. Microsoft doesn't want to add that format to Microsoft Office. Result: Massachusetts state agencies will soon begin to migrate from Microsoft Office to applications that support OpenDocument.

Does that sound simple enough? It is. But oh, the noise!

Microsoft is yowling that it's being unfairly excluded from Massachusetts' IT buying decisions.

Open-source advocates are crowing about the huge victory they say they've won, because the open-source OpenOffice uses OpenDocument.

Pundits are pounding their usual tables, insisting either that Massachusetts has no business persecuting Microsoft or that this is the beginning of open-source über alles.

These folks need to cut back on the caffeine.

It's true that this Massachusetts decision puts OpenOffice and other open-source office software in the hunt for 80,000 seats in Massachusetts government offices. Does that make this an open-source Armageddon for Microsoft?

Get real. Sun's StarOffice uses OpenDocument too. Corel says it's adding OpenDocument to WordPerfect Office. State offices can even continue to use Microsoft Office, as long as they convert their documents to OpenDocument format when saving them.

In other words, it's still the same old open-source vs. proprietary-products competition.

And it's true that Massachusetts agencies are abandoning Microsoft's proprietary document formats in favor of an open standard. Is that a persecution of Microsoft?

Hardly. It's the equivalent of deciding to use ASCII instead of IBM's mainframe character-coding system, EBCDIC. Vendors love their proprietary formats. That doesn't mean customers will love them too.

Despite all the posturing and blah-blah, there's really just one major issue here: Who gets to make IT decisions — buyers or sellers? The people paying the money, or the people getting the money?

You know the answer. It's the buyers. They're paying the money. They get to make the choices. That's how a free market works.

And, it turns out, it works a lot better when customers throw their weight around instead of meekly accepting whatever vendors offer them.

Notice I said better, not more efficiently. Every process, including IT buying, is most efficient when there's 100% cooperation and no competitive friction — in other words, when everybody follows the same leader. Then there's no duplication of effort, no wasted resources, no choices to make.

In fact, no choices — period.

And who really wants that? It sounds appealing to vendors, but only if they're the ones that get to lead. They don't want to follow.

It also sounds appealing to harried corporate IT people looking for a safe path through an ever-changing IT landscape. But that works only if that beaten path heads in a direction that matches the company's business needs.

If it's not, you get Massachusetts and Microsoft fighting over who gets to lead.

Who will win? We all will. Really. Vendors respond only when they're pushed. Customers push only when they clearly understand their IT needs. The results so far of this pushing-mitch of a dance: Massachusetts agreed not to dump Office in certain cases, such as when the user is disabled. And Microsoft now says it might add OpenDocument to Office, depending on customer demand.

Let's hope they keep dancing. It won't be pretty. But when vendors and customers both lead, it means better focus and more choices for us all. **© 57644**



FRANK HAYES, Computerworld's senior news editor, has covered IT for more than 20 years. Contact him at frank.hayes@computerworld.com.

Mixed Messages

Support pilot fish gets a call from the company president, whose mouse cursor is moving erratically. Cordless mouse? asks fish. It might be the batteries. "Got a call 15 minutes later from an assistant to let me know that took care of the problem," says fish. "Next day, I get handed down to the boss's office, who get a call from his boss, the CFO. Both seem aware to know about the automatic: your call has been closed. I read that was sent to the president — and why IT is spending so much time tracking the replacement of mouse batteries. Oh, and they passed along thanks for my prompt assistance."

Gone

This system conversion project is well under way; it's been months since users signed off on the list of new reports that will be created and those that will become obsolete.

"After the first test run of the new conversion, one user was broke," reports pilot fish working on the project. "The intended fish, his obsolete reports were selected. We had to explain to him the definition of obsolete."

Gone that Not Forgotten

Does pilot fish have to submit a request for a day off with his company's new Web-based system for tracking time off. "Usually I get a notification back right away, but I didn't get anything back that day," says fish. But next morning his boss from the system's developer, who's heard from the HR manager, who's heard from a manager in the corporate office. "Turns out I had inadvertently entered my phone extension instead of my employee ID when filling out the request," says

SHARK TANK

fish. "I ended up with the ID of a deceased employee."

The manager at corporate was rather upset that a former employee of his who had passed away was requesting a day off.

Or Something

Pilot fish responsible for technology purchasing gets a request from a user: "While using up and adding they saved some money for something to make computers run faster, better or something. Please use the new fish ID instead in the account of 10000. Thanks."

Concept Guy

Marketing manager tells developer pilot fish he wants a more report. "The fish told me that customer like reduction effects, but what would be the formula for calculating that?" greeted fish asked — something the today's date when the date fish ID was divided by the total revenue? Marketing manager: "That's not my job. My job is to come up with the concept!"

© HENRY'S SHARKY'S CONCEPT: You used me you had the ID of IT fish at sharktank@computerworld.com and I send you a shark tank and I run it. And check out the daily feed, because the Shark tank and sign up for Shark Tank home delivery at computerworld.com/sharktank.

FRANK HAYES ■ FRANKLY SPEAKING

Free-Market Dance

WHO GETS TO LEAD? That's the big question in the ongoing dance between Microsoft and the state of Massachusetts. For those who have been blissfully unaware of the situation, it comes down to this: Massachusetts has decided that its official format

for internal documents going forward will be OpenDocument, an XML standard from the OASIS consortium. Microsoft doesn't want to add that format to Microsoft Office. Result: Massachusetts state agencies will soon begin to migrate from Microsoft Office to applications that support OpenDocument.

Does that sound simple enough? It is. But oh, the noise!

Microsoft is yowling that it's being unfairly excluded from Massachusetts' IT buying decisions.

Open-source advocates are crowing about the huge victory they say they've won, because the open-source OpenOffice uses OpenDocument.

Pundits are pounding their usual tables, insisting either that Massachusetts has no business persecuting Microsoft or that this is the beginning of open-source über alles.

These folks need to cut back on the caffeine.

It's true that this Massachusetts decision puts OpenOffice and other open-source office software in the hunt for 80,000 seats in Massachusetts government offices. Does that make this an open-source Armageddon for Microsoft?

Get real. Sun's StarOffice uses OpenDocument too. Corel says it's adding OpenDocument to WordPerfect Office. State offices can even continue to use Microsoft Office, as long as they convert their documents to OpenDocument format when saving them.

In other words, it's still the same old open-source-vs.-proprietary-products competition.

And it's true that Massachusetts agencies are abandoning Microsoft's proprietary document formats in favor of an open standard. Is that a persecution of Microsoft?

Hardly. It's the equivalent of deciding to use ASCII instead of IBM's mainframe character-coding system, EBCDIC. Vendors love their proprietary formats. That doesn't mean customers will love them too.

Despite all the posturing and hoo-ha, there's really just one major issue here: Who gets to make IT decisions — buyers or sellers? The people paying the money, or the people getting the money?

You know the answer. It's the buyers. They're paying the money. They get to make the choices. That's how a free market works.

And, it turns out, it works a lot better when customers throw their weight around instead of meekly accepting whatever vendors offer them.

Notice I said better, not more efficiently. Every process, including IT buying, is most efficient when there's 100% cooperation and no competitive friction — in other words, when everybody follows the same leader. Then there's no duplication of effort, no wasted resources, no choices to make.

In fact, no choices — period.

And who really wants that? It sounds appealing to vendors, but only if they're the ones that get to lead. They don't want to follow.

It also sounds appealing to harried corporate IT people looking for a safe path through an ever-changing IT landscape. But that works only if that best path heads in a direction that matches the company's business needs.

If it's not, you get Massachusetts and Microsoft fighting over who gets to lead.

Who will win? We all will. Really. Vendors respond only when they're pushed.

Customers push only when they clearly understand their IT needs. The results so far of this pushing match of a dance: Massachusetts agreed not to dump Office in certain cases, such as when the user is disabled. And Microsoft now says it might add OpenDocument to Office, depending on customer demand.

Let's hope they keep dancing. It won't be pretty. But when vendors and customers both lead, it means better focus and more choices for us all. © 57044





CHANGING THE LANDSCAPE OF BUSINESS INTELLIGENCE*

[Integrating financial management and BI to create the first Business Performance Management system.]


INTRODUCING HYPERION SYSTEM™ 9

Now you can attain performance visibility and take immediate action to solve business problems with the new Hyperion System 9. Built as a single modular system, Hyperion System 9 increases productivity while reducing risk and TCO. It's straightforward for IT to integrate with database and transaction systems. And it's even simpler for end-users to learn and use. See the launch webcast: www.hyperion.com/launch



VISIBILITY.
PERFORMANCE.
SUCCESS.™

73% of the FORTUNE 100® and 76%
of the European 100 compared business
collaboration providers and came to
a single conclusion.



Obviously, great
minds think alike.

Many of the world's most successful organizations rely upon Sterling Commerce to automate their business processes, so they can exchange critical information with their trading partners, subsidiaries and customers. Reliably. Securely. And regardless of the application being used. Sterling Commerce delivers the first platform to meet all the complex challenges of real-world multi-enterprise collaboration. Find out what so many companies already know. Speak to a Sterling Commerce representative today. Or visit www.sterlingcommerce.com

BUSINESS APPLICATIONS / BUSINESS INTEGRATION / BUSINESS INTELLIGENCE / BUSINESS PROCESS MANAGEMENT / SOLUTION DELIVERY



sterling commerce

©2006 Sterling Commerce, Inc. ALL RIGHTS RESERVED Sterling Commerce and the Sterling Commerce logo are trademarks of Sterling Commerce, Inc. Sterling Commerce is an SBC Communications, Inc. company. FORTUNE is a registered mark of Time Inc.